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City of Cambridge.

THE

MAYOR'S ADDRESS

AT THE

Organization of the City Government,

AND THE

ANNUAL REPORTS

MADE TO

THE CITY COUNCIL.

CAMBRIDGE:
TRIBUNE PUBLISHING COMPANY.
1881.

City of Cambridge.

In Common Council, Dec. 15, 1880.

Ordered, That the Committee on Printing be authorized and instructed to obtain proposals, and to make a contract, for the printing and binding of fifteen hundred copies of the Annual Report of the Committee on Finance to be made during the current month, together with the accompanying documents, and such other documents as shall be ordered to be printed, including the inaugural address of the Mayor elect; said documents to be printed under the supervision of the City Clerk, and under the direction of the Committee on Printing, and the same to be for general distribution.

The proposals and contract aforesaid to include the Mayor's address, and all other documents ordered to be printed, whether bound together or in separate pamphlets. The expense of such printing to be charged to the appropriation for stationery and printing.

A true copy of the order as adopted by the City Council, and approved by the Mayor, Dec. 22, 1880.

Attest: JUSTIN A. JACOBS,

City Clerk

ADDRESS

OF

HON. JAMES A. FOX,

MAYOR.

Gentlemen of the City Council: —

Called by the suffrages of our fellow-citizens, we have assembled on the day appointed by the charter of our city, and have taken upon ourselves the solemn oaths that bind us to a faithful discharge of duty in our respective positions; first recognizing our dependence upon God, by prayers of thankfulness for the past and for His blessing on our future acts; for we believe that "except the Lord keep the city, the watchman waketh but in vain."

It may well awaken our pride that we have been called so unanimously, by an intelligent constituency, to administer their government; let us hail it as an augury of good, and do our utmost by harmonious action, by the careful guarding of every interest that affects the health, the morals, or the general happiness of our people, to warrant their kind and generous confidence.

The whole power of municipal regulation rests with the City Council; its concomitant is responsibility, and it holds you, and you alone, to a continuance of that policy of retrenchment, which will surely, in the near

future, entirely relieve us from our burden of indebtedness.

Your chief magistrate, under the charter, is but an executive officer, whose main duty is to cause the laws and regulations of the city to be enforced, and to exercise a general supervision over every department of government and its subordinate officers; but rely upon me to aid you, so far as I may, and, with all the ability I possess, in every measure tending towards a successful administration of your trusts.

In accordance with that part of my duty which requires me, from time to time, to communicate to your boards respectively such information, and to recommend such measures, as the interest of the city may require, I will now present to you what I have been able to gather in the very brief time at my disposal.

A compend from the auditor's statement of the city of Cambridge, at the end of the financial year, Nov. 30, 1880, will suffice, for the present, to enable you to understand its condition.

RECEIPTS AND EXPENDITURES.

Cash in hands of treasurer, Nov. 30, 1879	$58,882 07
Cash received from all sources to Nov. 30, 1880	1,533,563 76
Total receipts for the year	$1,592,445 83
Expenditure for the year	1,562,703 36
Leaves cash balance Nov. 30, 1880	$29,742 47

APPROPRIATIONS.

The appropriations for 1880 were	$944,365 00
Expended	906,778 41
Leaving unexpended balance	$37,586 59

FUNDED CITY DEBT.

	1880.
Bonds outstanding	$3,254,000 00
Sinking Fund, under Act of Legislature, and raised by general tax and interest	1,233,559 71
Balance net city debt	$2,020,440 29

FUNDED WATER DEBT.

Bonds outstanding	$1,528,700 00
Sinking Fund, from percentage of water rates and interest,	414,568 48
Balance net water debt	$1,114,131 52

UNFUNDED DEBT.

State tax	$52,155 00
County tax	26,208 53
National Bank tax	5,581 11
One quarter of license fees to State	5,423 95
Funds held by city in trust	26,000 00
Total	$115,368 59

GENERAL ASSETS.

Cash in treasury (less bills approved but not paid)	$29,742 47
Bills receivable, secured by mortgage on real estate	7,411 00
Due from Commonwealth for State aid	14,704 47
Due from Commonwealth for Corporation tax	38,936 31
Due from Commonwealth for National Bank tax	21,190 89
Surrendered estates, estimated value	147,576 32
City lands, estimated value	79,083 00
Uncollected water bills	1,025 71
Uncollected taxes 1879 and 1880	81,410 98
Uncollected sewer assessments	492 36
Uncollected grading assessments	2,177 08
Miscellaneous bills, tuition of non-residents, sale of material, trees, etc.	1,434 91
Total	$425,185 50

The city lands are estimated at their fair market value. Surrendered estates being set down at near their cost, are, without doubt, overvalued, and the treasurer reports probably $25,000 of the uncollected

tax bills, sewer and grading assessments, as uncollectible.

FUNDED DEBT COMPARED.

The net city and water debt Nov. 30, 1880, as compared with the same debt Nov. 30, 1879: —

	1880.	1879.
Gross funded debt	$4,782,700 00	$4,782,700 00
Less amount in both sinking funds	1,648,128 19	1,378,976 63
Net gross debt	$3,134,571 81	$3,403,723 37
Decrease of net gross debt Nov. 30, 1880		$269,151 56

THE TRUST FUNDS.

Dowse Institute Fund	$10,000 00
Sanders Temperance Fund	10,000 00
Daniel White Charity Fund	5,000 00
Fay Fund (Cambridge Public Library)	1,000 00
Total	$26,000 00

These funds were paid into the city treasury in previous years, and merged in the cash receipts of each particular year. The "White" and "Fay" Funds are represented by notes of the city, signed by the mayor. The "Dowse" and "Sanders" Funds rest as an equitable claim alone. The city can never be called upon to pay either of these four items, so long as it carries out the provisions of the trusts. I ask your attention to the facts, *First*, That the city is called upon to pay interest at the rate of six per cent per annum upon these amounts "in perpetuum." *Second*, That the principal exists only as a portion of the unfunded debt of the city; and, *Third*, That the amount of $1,560 has to be raised annually by general tax, to meet the expenditure. I recommend at some time, when conditions are favorable, the repay-

ment by the city, and the establishment into a permanent, tangible fund, of these trusts. I recommend a re-valuation, by the proper committee, of the balance of surrendered estates held by the city, and would renew the recommendation of my predecessor, that "prompt advantage be taken of any favorable offers that may be made," for these and other city lands.

TEMPORARY LOAN.

For the past year, from time to time, between Jan. 1 and Oct. 10, the city borrowed, in anticipation of the receipts from taxes, $350,000, at rates of interest from $2\frac{7}{8}$ to $4\frac{1}{4}$ per cent; let us hope for equally favorable negotiations, the present year, for such loans.

CITY AND WATER DEBT, PAYABLE THIS YEAR.

Of the city debt, $100,000, and of the water debt, $50,000, are payable in 1881, for which provision is made by both the sinking funds.

The foregoing items are but a synopsis of the fiscal affairs of the city, and statistics and details relative thereto will be found in the Auditor's Annual Report.

SCHOOLS.

Faithful to the principles of our forefathers, who early sought "to advance learning and perpetuate it to posterity," the city of Cambridge provides for the education of its children. One of the largest appropriations made by previous City Councils has been for the care, maintenance, and conduct of our public schools.

It now becomes your duty to sustain the wise and efficient committee who specially govern and control them.

The superintendent, Mr. Francis Cogswell, has kindly furnished me with the following items, which will suffice for this occasion: —

Number of pupils	7,766
Increase during the year	286
Increase, not including the pupils in the Belmont district	156
Number of teachers	181
Increase during the year	8
Increase, not including the teachers in the Belmont district	4
Cost of instruction	$130,371 75
Decrease from last year	2,198 74
Decrease, not including the cost in the Belmont district	3,256 74
Total expenditures for all school purposes	163,048 06
Increase over last year	544 15
Excluding expenses in the Belmont district, and the cost of land for a school-house in East Cambridge, the decrease in total expenditures will be	8,449 85
Receipts from Hopkins Fund	767 72
Receipts from tuition of non-resident pupils	556 00

A primary school-house is in process of erection in Ward Three, at a cost of about $6,500.

A new primary school-house will be needed in Ward Four the coming year.

PUBLIC LIBRARY.

Public libraries, as they exist in this Commonwealth, are but an extension of our public school system, to those who have passed beyond its sphere. They are potential for an indefinite amount of scientific and literary service to any community. The change of name to "Public Library" has given ours a more extensive

range, many citizens now embracing the advantages offered, who did not formerly understand its exact character. While a member of the City Council, the workings of this institution became personally known to me, and I am happy to understand that it is becoming more appreciated year by year; a free use of its books for home reading, and an increased use of its works of reference by the advanced pupils of our public schools, affording full evidence of the fact.

The whole number of books in the library is 12,800. The number issued during the past year has been 83,-184; the number of new works purchased has been 789; those donated have been 62. The largest daily issue of books was on Jan. 10th last, when 630 volumes were issued. The daily average was 271.

I commend this institution to your favor.

POLICE.

The police force consists of fifty-six men, divided into day and night reliefs, as follows: Day relief, twenty-one men; night relief, thirty-five men. In addition to the regular force, a special officer has been on night duty since the 19th of June, in the territory annexed from Belmont; and Special Officer Benjamin F. Bridden, who has served in the Police Department for twenty-five years, has been detailed for duty at Station Five.

The expenses of this department in 1880 were $52,-685.45, — a saving, as compared with the previous year, of $3,528.93.

The Chief of Police recommends the purchase of two saddle horses for special service in protecting the large number of dwellings vacated during the summer months, particularly in Districts One and Two. Also the fitting up of cells in Stations One and Two, for the temporary confinement of insane persons. I indorse the recommendation as to mounted patrolmen for the duty specified, past experience having fully established their value ; and humanity will prompt the adoption of the second recommendation, as many insane persons are annually detained by the police (twenty-four during the past year), who must of necessity be confined in the station-houses, to await the proper legal forms required, before they can be committed to an insane asylum, and padded cells are essential to prevent self-inflicted injuries.

LICENSES.

The whole number of licenses granted for the sale of intoxicating liquors was one hundred and sixty-three, as follows: —

Innholders	5
Victuallers	62
Grocers	68
Apothecaries	25
Wholesale dealers	1
Bottlers	2
Total	163

The Chief reports the licensees as "all conforming to the law."

FIRE DEPARTMENT.

The appropriation for the Fire Department for 1880 was $62,000; expenditure, $61,955.75.

The force consists of one Chief Engineer, three assistant engineers, sixty members of steam-engine companies, twenty-eight members of hook and ladder companies, two members of the chemical engine, one relief engineer, and two telegraph operators, — ninety-seven men in all. Twenty-two are permanently employed, and seventy-five are *call* men. Twenty-two horses are required to perform the duty, of which one has been sold during the year, for lameness, another because of the discontinuance of Supply Hose Company, and a third transferred to the City Farm, after seventeen years of service, where, with little work and kind treatment, he should pass the remainder of his days.

Eighty-six alarms have occurred during the year, fourteen originated in Ward One, twenty-one in Ward Two, twenty-one in Ward Three, twenty-five in Ward Four, and five in Ward Five. Assistance was rendered at fires out of the city five times, and assistance was received from without three times.

The amount of loss from fire was $73,431.54. The amount of insurance paid, $61,977.92.

Harvard University gracefully indicated its appreciation of the Cambridge Fire Department by a gift to the city, through its honored president, of $3,000, for the purchase of a chemical engine, with the horses, harnesses, and all other equipments needed. An engine of

the Perkins pattern was obtained with swinging harnesses, Berry's patent hames, and other appointments of the latest and most approved pattern. It was put into service July 1, 1880, and is located in Central Square Building, Ward Four. It has been used to extinguish fires in dwelling-houses several times, and with good results, and the losses specially by water have been very slight. The Chief reports this engine a valuable addition to the department.

Telegraph lines have been extended into the new territory annexed from Belmont, and box No. 92, located on the corner of Cushing and Locust Streets. Harvard University has also purchased a box, numbered 54, and located on the south side of Memorial Hall; and, though the private property of the University, it is understood that it may be used, in case of fire in the immediate vicinity.

The Chief recommends that a signal box be located on the corner of Winsor and Hampshire Streets, and that one be placed on or near the pumping station at Fresh Pond; that repairs be made to Hose Carriage No. 4 and Hook and Ladder Truck No. 1, and that a quantity of cotton hose be purchased each year, to replace leather hose now in use and considered unreliable.

WATER WORKS.

The total receipts from water rates, fines, etc., were $178,111.48; the expenditure, omitting construction account, $165,300.70; net revenue, $12,810.78; net revenue in 1879, $4,974.44.

Contrary to some expectations, the reduction in water

rates, made for the relief of people of moderate means, which took effect July 1, 1880, did not reduce the net revenue, which appears, by the above, to be $7,836.34 in excess of that of 1879. This is partly owing to the increase of hydrant rates, and the number of new consumers of water.

As the hydrant rates are paid from the general tax levy, these may now perhaps be reduced.

WATER SUPPLY.

Your Water Board reports the rainfall to have been 6.33 inches less in 1880 than in 1879, and 17.68 inches less than in 1878.

About 1,750,000 gallons, daily, is all that we can really depend upon from Fresh Pond with an average rainfall, and the average daily consumption the past year was 2,432,200 gallons.

The eminent experts employed by your special committee of 1878 furnish the following items of interest: —

Prof. E. S. Wood, of this city, says, "That Fresh Pond alone cannot be relied upon to furnish a sufficient supply of water for the city of Cambridge."

And Mr. E. S. Chesbrough, of Chicago, says, "It will be found best, for an additional supply, to take a part of the Shawsheen River, or go to the city of Boston."

The long-continued drought has lowered the pond to a level several inches below the top of the pumping conduit, and it is daily falling; but your Water Board, fully equal to the emergency, has placed an engine and pump on the borders of the pond, in order to exhaust

that supply; and, with admirable foresight, has, by permission of the Boston Water Board, made a connection with their works, and thus guarded our citizens from the danger of a possible water famine.

The engine is a portable one, of thirty-five horse-power, built by Messrs. Kendall & Roberts, of this city, and the pump a twelve-inch, — "Heald and Sisco," — one of abundant capacity, to enable the engines at the pumping works to furnish the reservoir with its large daily supply.

The connection with the Boston Water Works is made by a sixteen-inch pipe laid from Pleasant Street through Putnam Avenue, Brookline Street, and across Brookline Bridge (the pipe across the Charles River being enclosed in a pipe bridge with an inverted siphon at the draw) to Brighton Avenue, where a connection has been made with the sixteen-inch main pipe in Boston. The expense of the bridge and siphon was $10,375.93; for the laying of the pipe, $10,453.53; the total cost having been $20,829.46.

The foregoing precautionary measures for a continuance of our water supply have been made none too soon, as one of the main pumps at the pumping station cannot now reach the water; and if the pond should continue to fall, the other pump will be in a like situation within a short space of time.

If we should be compelled to use the appliances heretofore mentioned on the border of the pond, in order to fill the conduit, the city of Cambridge, with its more than 50,000 inhabitants, will be forced to depend upon one pump alone. Should that source fail, the value of

the connection with the Boston Water Works will at once become apparent.

A dreaded exigency is therefore provided for, and the advantage of a single day's use of the Boston water, on the part of our citizens, might more than offset the entire outlay for the connection made.

SHAWSHEEN RIVER.

The Shawsheen River, referred to in the report of the City Engineer as a means of additional water supply, has its rise in the towns of Lexington and Bedford, and flows in a generally northern direction, through the towns of Lexington, Bedford, Billerica, Tewksbury, and Andover, and unites with the Merrimac River, just below the city of Lawrence.

The area of the water-shed embraced in this region of territory, some thirty-four square miles in extent, is sparsely settled, quite free from contamination, and is not likely to be occupied for many years to come.

With sufficient storage basins, the river will probably yield from 18,000,000 to 20,000,000 of gallons per day; two routes have been surveyed for a line of water pipes, one of ten miles, the other a little more than thirteen miles, in length.

By vote of your predecessors, on recommendation of the Water Board, a legal notice has been given of the intention of Cambridge to ask the Legislature for the right to take water from the Shawsheen River; I recommend that a proper petition, in furtherance of said notice, and to obtain the rights and privileges therein stated, be presented to the incoming Legislature.

With this right secured, we shall be thrice armed against calamity. *First*, Our sister city, with her great storage basins, encouraged to safety by her almost unlimited supply, may be disposed to sell to Cambridge water enough daily to re-enforce our weakened resources; this might be taken at night, when drawing from the mains would not incommode her own citizens by reducing the pressure. *Second*, The Shawsheen, winding its way northward to the Merrimac, may pause in its course, and yield a tithe of its translucent waters for our needs. And *Lastly*, If, by God's mercy, these protracted seasons of aridity should cease, and the "showers and dews" be again vouchsafed us in their former proportions, then will our once lovely basin glisten in the sunlight to its full level, as of yore. The wisdom and experience of the Water Board, and your own best judgment, will doubtless combine to bring to a happy issue this important question.

ALMSHOUSE, AND OVERSEERS OF THE POOR.

The Board of Overseers of the Poor still continues to manage the affairs of its department with unequalled success. I have personally inspected the almshouse, the stables, farm and ledge, therewith connected, and examined with care the reports of the Board, and of the warden, Mr. William E. Hough, and the assistant city physician, Dr. Obed C. Turner. The excellent condition of the almshouse reflects much credit upon all concerned. The net expenditure for outside aid was $9,562.71; for the almshouse proper, $12,840.68; and the excess of receipts over expenses

in carrying on the farm and working the ledge was $1,225.68, making the entire net cost to the city for the care and maintenance of the poor for the year ending Nov. 30, 1880, $21,177.78, which is $4,178.41 less than it was the previous year; this does not include the expenses of the house-offal department, which cost $7,068.34; receipts from the same source were $4,847.64, giving a net cost of $2,220.70. This exhibit is very gratifying, as showing a reduction of pauperism as well as a financial gain to the city.

The personal *narratives* taken of applicants for aid, now on file at the office, embrace no less than those of six thousand five hundred and twelve persons. By these narratives the overseers have been able to ascertain that the larger portion of the applicants had legal settlements in other cities and towns than Cambridge, or were State paupers, and in either case not chargeable upon our city.

STREETS.

The appropriation for construction, paving, and repair of streets for the year 1880 was $57,000. The total expenditure during the same period was $55,535.86. The following-named streets have been accepted, and are now public ways: —

Acacia Street, from Ash to Hawthorn Streets, $312\frac{74}{100}$ feet.
Amory Street, from Broadway to Hampshire Streets, $1{,}026\frac{67}{100}$ feet.
Hawthorn Street, from Brattle to Mt. Auburn Streets, $627\frac{44}{100}$ feet.
Howard Street, from River Street to Western Avenue, $481\frac{35}{100}$ feet.
Meacham Street, from North Avenue to Somerville line, 413 feet.

The square at the junction of Main Street and Broadway has been thrown open to public travel.

It has been graded from plans of the City Engineer, and an oval curb placed around one of the trees on the easterly end, where a watering-trough, the gift of Mr. Edward Kendall, will soon be placed. The Superintendent of Streets reports that an increased appropriation will be necessary, and he calls attention to previous recommendations to pave Main Street in sections year by year, and suggests a beginning during the present year.

Our streets, as I have observed them from time to time, are generally in good condition. It should be your aim to keep them so. Well-kept public thoroughfares naturally invite the stranger, who may afterwards be induced to settle in our midst. The delightful shade trees that adorn our highways, always our pride, and which excite the admiration of so many, are another means of attraction, and worthy of your fostering care. The Hon. G. B. Northrop, secretary of the Connecticut Board of Education, in his work on "Rural Improvement," cites the ancients, who were proficient in tree planting, and says: "Memphis, Athens, Carthage, Rome, Pompeii, and Herculaneum, as their very ruins still show, had each their shaded streets or parks. The destruction of shade trees, the neglect of public streets and private grounds, the decay of rural tastes, and the utter slight of home adornments, were clearer proofs of the great relapse to barbarism than the vandalism which merely destroyed the proud monuments of classic art and literature." Let us, then, not only protect our shade trees, but replace the fallen ones, and line the waste streets and avenues with like adornments.

Improvements are projected by prominent gentlemen along the line of Charles River, from Captain's Island (so called) to West Boston Bridge, by the building of a boulevard, and the development of the adjacent territory into choice building lots for valuable residences. This is an important matter to us, and should receive the prompt attention and hearty co-operation of the City Council. In view of this, the acquisition by our city of Captain's Island, lying at the end of Magazine Street, which contains about three and a half acres of land, now the property of the Commonwealth, may become desirable as a breathing-place for our citizens during the heats of summer.

The new Tudor Park, on the border of Fresh Pond, is yearly becoming more and more attractive, and I would suggest whether a portion of the shore of the pond, lying within the lately acquired Belmont district, might not also be utilized by some form of adornment. The Common and the public squares of the city have presented an admirable appearance during the summer, and a very little additional expenditure might be desirable still further to improve such attractive places for our residents, especially the poor and humble, who may not possess other advantages for rest or recreation.

BRIDGES.

The expenditure for bridges during the past year was $2,292.18, and they are all in good condition, with the exception of the Brookline and Walden Street bridges. The former should be rebuilt above the piling,

and the latter needs to be replanked. The Superintendent estimates that the sum of $5,000 will be required this year for the care and repair of the several bridges chargeable upon our city. This is so necessary an expenditure, that I only need to mention it in order that it may receive proper attention at your hands.

SEWERS.

During the past year new sewers have been constructed, mostly of twelve-inch pipe, in Lawrence, Franklin, Buckingham, and Follen Streets, at a total cost of $1,577.55. The general repairs have been larger than for a number of years previously, the principal item of which was for the Jay Street sewer. When opened, it proved to be fully as bad as was represented by the City Engineer one year ago. Five hundred and seventy-two feet of its length have been rebuilt, at a cost of $4,900.73. The sewer on Washington Street has also received extensive repairs, and the Linden Street sewer has been in part taken up and relaid. The deposits which have accumulated around the outlet of the Bridge Street sewer, and under the adjacent wharves, should receive your early attention. I am informed that the city of Somerville, whose interests in the matter are large, is willing to co-operate with us in the work.

The proposed marginal sewer along Alewive Brook, with a branch from Cider Mill and Richardson's ponds, to empty into the Charles River, is a matter which will require your earnest attention and deepest

thought. The committee of last year, in its report, while recognizing the importance of the withdrawal of sewage from the brook, in view of the peculiar circumstances and the magnitude of the work, hesitated to then recommend the building of the main line, but favored the immediate construction of the branch sewer from the two ponds above mentioned. It is now left for you to decide this whole matter. A few suggestions, gathered from the brief examination which I have been enabled to make, I would offer for your consideration. The cost of this proposed work is estimated at a very large sum, yet doubt is expressed by some whether the advantage to be gained will be permanent. The Charles River at the proposed outlet is sluggish. The tide waters in our adjacent bay and its tributaries flow over a surcharge of sewage matter, and a sewer to the sea, built and used in common with other towns on this side of Boston proper, and jointly paid for under the award of a commission, is, by many citizent of judgment and experience, deemed to be imperative. A full consideration given to this question can but point out the proper course to be pursued.

The total construction account for new sewers during the past year has been $3,308.01; for the maintenance and repairs of present sewers, $10,554.40. Total, $13,862.41.

THE BELMONT DISTRICT.

By Act of the Legislature of last year, a portion of the neighboring town of Belmont was annexed to the city of Cambridge. This new territory embraces some five

hundred and seventy acres, including about one half of Fresh Pond, and a large tract of meadow lands lying westerly from Alewive Brook. Let us see to it that every reasonable advantage may be extended to our newly acquired citizens, so that in the future they may not regret the union thus formed.

STREET LAMPS.

In our city there are eighty-five miles of streets, exclusive of those in the Belmont district, and there is an average of one lamp to every five hundred and forty-one feet. The whole number of lamps is eight hundred and thirty-eight, of which seven hundred and sixty-nine are burners of gas, and sixty-nine of kerosene oil, fifteen having been added during the last year.

The committee has properly added lamps on eighteen cross streets to the number of "all-night lamps," while three hundred and forty-seven lights, including those in the new Belmont district, are now extinguished at twelve o'clock.

CEMETERY.

The sole care and management of our city cemetery is, by Act of the Legislature, vested in a Board of Commissioners, and the faithful discharge of its sacred trust is clearly made manifest by the attractive appearance of our "city of the dead."

The commissioners report that a satisfactory settlement has been made of the claim for damages against the city by an adjacent land-owner, and that the purchase of an additional and desirable strip of land has been effected in accordance with such settlement.

STREET SIGNS.

There is one other matter, though of minor importance, which deserves attention, and that is the large number of streets and portions of streets which still remain unmarked by any sign upon post, building, or lamp-post. In my passing through the city, I have had frequent occasion to notice this, and the annoyance which it occasions. I would, therefore, ask your attention to this matter as one of immediate necessity.

HARVARD UNIVERSITY.

It gives me much pleasure to say that the relations between the municipality and the corporation of Harvard University were never in a more harmonious condition than at present. Both corporations are wealthy, and potential for good to each other. Let us hope that the *entente cordiale* thus established may never be interrupted.

TABULAR STATEMENT.

By the favor of one of our interested citizens, I have been enabled to append a tabular and semi-official statement of the whole expenditures of our city government, as well in particular departments as in the aggregate, since the establishment of our municipal form of government in 1846. I believe it to be correct, and it shows some interesting facts, which denote the growth of our city, and the gradual increase of expenditures, and may be valuable for future reference.

Gentlemen of the City Council: —

With unfeigned solicitude I enter upon the duties this day imposed upon me, and offer these incomplete suggestions for your careful consideration, fully satisfied that, if aught remains unsaid which should have been presented, the omission will be supplied by the full and authoritative reports that the several heads of departments have made, and which will be placed in your hands at an early day. All these should be carefully studied, and the wise suggestions therein made, to which I am not able fully to allude, specially considered by the several committees to which they may be referred.

When you may be called to pass upon the important expenditures for the carrying out of the various measures proposed, remember that the present city debt is still of undue proportions, and that the tax rate bears onerously upon our citizens, and therefore wisely discriminate between our necessities and our desires.

The interesting exercises of Tuesday last, in commemoration of the Two Hundred and Fiftieth Anniversary of the foundation of our city, which was so successfully carried out by your predecessors, and in a manner so becoming a city of the character of our own, suggests the thought that a new era is opening before us; that Dudley and Hooker, Shepard and Harvard, with their associates, our founders, all resolute, true and pious men, that the heroic leaders of the Revolutionary period, and the steadfast, brave, and patriotic defenders of the nation's unity in the civil war, as well by coun-

MUNICIPAL STATISTICS OF THE CITY OF CAMBRIDGE FROM 1846 TO 1880, INCLUSIVE.

	YEAR ENDING FEB. 28–9.									YEAR ENDING NOV. 30.								
	1847.	1848.	1849.	1850.	1851.	1852.	1853.	1854.	1855.	1855 (9 months).	1856.	1857.	1858.	1859.	1860.	1861.	1862.	1863.
Population	.....	.....	.....	15,215	.....	.....	.....	.....	20,473	.....	.....	.....	.....	.....	26,060	.....	.....	.....
Valu'n of the city	.. ....	9,806,529	12,575,015	10,667,272	11,469,618	12,392,440	13,175,257	13,599,360	15,437,100	16,111,700	18,038,650	20,148,150	20,261,850	20,603,000	21,280,700	21,687,700	21,527,100	22,549,200
Total Expendit's.	40,725	75,799	85,635	76,470	98,470	114,956	136,260	118,194	123,543	99,722	168,810	210,539	216,859	186,966	195,569	233,918	435,157	338,517
Amount of Debt.	23,184	50,523	52,378	63,670	91,661	117,045	134,800	147,920	148,154	136,334	207,814	241,569	253,056	239,237	258,346	252,052	501,934	606,317
Tax Rate ₱ $1000	5.00	5.40	5.50	6.30	6.30	6.30	7.50	6.50	7.10	7.60	7.70	8.00	9.10	8.60	9.00	9.50	10.00	11.00
Pauper Dep't....	11,035	7,300	5,242	5,438	5,290	8,498	7,248	8,787	7,139	3,983	6,999	10,487	9,603	8,846	8,360	9,934	14,303	18,909
Fire Dep't.....	2,928	2,911	4,539	6,822	5,667	9,537	10,919	11,525	9,469	5,813	14,065	15,276	12,096	13,284	12,772	13,102	14,574	23,609
Street Dep't.....	.....	8,858	13,737	9,871	9,981	9,995	11,588	15,312	17,542	14,296	31,748	33,157	38,641	29,369	32,803	30,733	30,899	37,413
Sewer Dep't.....	13	1,225	1,122	377	6,526	6,158	5,599	4,917	4,610	5,766	11,252	11,218	9,267	7,732	6,624	3,869	953	5,380
School Dep't	14,954	35,346	36,075	22,339	23,932	42,253	59,909	31,467	30,652	24,219	47,787	61,588	51,888	53,058	43,468	61,423	50,239	72,280
Public Library...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	382	382	445	375	313
Police Dep't.....	2,017	3,550	3,657	3,535	3,750	4,090	4,155	5,227	4,435	4,600	8,736	11,849	13,514	12,511	14,396	13,760	13,944	14,505
Value of S'g F'ds	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

MUNICIPAL STATISTICS OF THE CITY OF CAMBRIDGE FROM 1846 TO 1880 (continued).

	YEAR ENDING NOV. 30.																
	1864.	1865.	1866.	1867.	1868.	1869.	1870.	1871.	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.
Population	.....	29,112	.....	.....	.....	.....	39,634	.....	.....	.....	.....	47,838	.....	.....	.....	.....	52,740
Valuation of the city..	23,271,500	26,085,900	28,385,700	31,853,500	34,093,800	39,210,900	43,097,200	46,859,800	55,248,350	62,421,215	66,576,671	66,623,014	62,636,453	55,755,050	49,615,140	49,238,098	49,629,060
Total Expenditures....	532,663	536,911	580,866	648,798	655,930	777,940	975,518	1,263,417	1,284,314	2,065,858	2,485,299	1,759,773	1,565,737	1,351,132	1,134,666	1,082,487	1,562,703.36
Amount of Debt.....	830,236	1,104,782	968,974	1,164,284	1,265,276	1,393,050	1,678,917	1,971,010	2,185,843	3,127,677	4,400.603	4,706,755	4,830,174	4,923,253	4,886,822	4,863,334	4,887,063.53
Tax Rate ₱ $1000....	11.50	15.00	13.20	15.20	13.80	14.00	14.00	15.60	12.00	13.50	12.50	17.00	16.00	17.20	18.00	17.00	16.00
Pauper Department ...	19,290	21,481	28,168	26,107	31,210	36,719	39,395	42,024	42,610	64,051	70,562	80,719	86,469	71,694	44,835	39,403	24,750.31
Fire Department	20,966	21,958	22,389	28,087	27,624	63,788	41,595	51,895	42,373	59,452	97,355	89,949	77,417	68,512	59,939	51,664	61,437.88
Street Department	39,528	44,700	47,057	54,170	55,093	112,800	214,200	265,207	199,186	246,833	303,522	172,331	152,959	120,801	104,772	95,557	61,044.63
Sewer Department....	2,764	3,683	7,194	6,992	10,793	35,106	115,191	35,286	72,356	111,871	258,927	135,432	84,383	37,521	9,538	7,810	11,293.43
School Department....	105,257	81,842	106,913	108,586	131,412	141,216	158,452	250,901	235,706	219,151	260,187	262,934	210,538	188,564	168,938	162,503	161,685.46
Public Library.....	590	1,111	1,028	1,093	1,357	1,185	1,910	2,894	3,393	3,944	5,129	6,040	5,961	6,042	6,000	5,993	5,999.77
Police Department....	18,514	22,833	30,387	34,796	36,507	37,832	42,547	57,988	58,293	62,067	71,710	71,093	71,405	66,850	65,395	59,848	53,837.99
Value of Sinking Funds	.....	.....	6,367	18,935	24,100	28,086	59,673	89,811	171,183	295,012	468,669	606,759	711,387	899,325	1,139,621	1,396,523	1,648,128.19

sel as on the field,— a glorious line of self-sacrificing men, —have finished their work, and a great city is now before us. It numbers more than 50,000 inhabitants, and possesses more than $50,000,000 worth of property. In her very midst stands the leading university of the land. Schools for the education of her children are unrivalled; miles of streets underlaid with all the appliances that our civilization affords for the health and comfort of her people, cover its surface.

With this retrospect ever prominently in mind, let us carry on the work of municipal administration and development, and so combine the elements for human happiness, that shall continue to keep Cambridge one of the fairest of cities.

REPORT

OF THE

COMMITTEE ON FINANCE.

The Joint Standing Committee on Finance, for the year 1880, respectfully submits its final

REPORT.

Your committee desires to congratulate the City Council that the determination expressed at the beginning of the year, to maintain the policy of economy and prudence which has characterized the three preceding years, has been so fully realized. Whatever apparent increase there may have been in the outlay of the public money was inevitable, and to a large extent beyond the control of the City Council.

The appropriation account shows that the total expenses of the different departments were —

In 1880	$1,163,162 33
In 1879	1,114,438 02

There has thus been an apparent increase of $48,724.31 in 1880, over the expenditures of the preceding year.

This additional expenditure is more than accounted for by the following items, the first of which had been pending during the preceding two administrations, and is therefore not rightly chargeable as a current expense, viz. : —

Amount paid for the Bancroft estate, surrendered on account of filling to grade in the Sparks Street district	$18,893 93
Amount of extra expense for protection of the water supply	25,347 50
Incidental expenses of annexation of a part of Belmont	4,075 00
Cost of school-houses in annexed district	6,436 00
Land for school-house on Charles Street	1,500 00
Total extraordinary expenses	$56,252 43
Less increase over expenses of 1879	48,724 31
Making an actual difference in favor of the past year of	$7,528 12

The amount borrowed on temporary loans, in anticipation of receipts from taxes, was —

1879	$352,000 00
1880	350,000 00

Making a difference of $2,000 in favor of the year 1880.

The amount of interest paid on these temporary loans was —

In 1879	$7,230 20
In 1880	6,660 94
Decrease in 1880	$569 26

The lowest rate of interest paid on these temporary loans was $2\frac{7}{8}$ per cent, which is the lowest rate ever paid by the city.

The cash balance in the hands of the Treasurer as per Auditor's account was, at the close of business, —

Nov. 30, 1879	$58,882 07
Nov. 30, 1880	29,742 47
Decrease in 1880	$29,139 60

The reasons for this reduction of the cash balance are given elsewhere in this report, in the statement of extraordinary expenses incurred.

A full examination of the cash in the hands of the Treasurer was made by your committee, at the close of business on the 30th of November. The amount was found to agree with the balance as shown by his cash book, — namely, $35,203 28; the difference between this balance and that of the Auditor being the amount of unpaid bills approved and entered in his accounts.

This committee has also carefully examined the accounts of the City Treasurer, in accordance with the plan heretofore adopted. (See City Document of 1878, pages 26 and 27.) These accounts were found correct, as verified by the books of the Auditor of Accounts.

There are in the hands of the Treasurer available assets to a considerable amount, represented by tax-deeds of property, conveyed to the city for non-payment of taxes and assessments of various kinds, and which has remained unredeemed for upwards of two years from date of sale. During the year 1879, and prior to Nov. 30, a sale took place of so much as had remained in the hands of the Treasurer for two years prior to the date of the advertisement thereof. A list of such property now liable to be sold is in course of preparation, and will be advertised early in the ensuing year. The benefit of the cash realization from this sale will therefore necessarily accrue to the next administration of city affairs.

The following comparative tables are prepared from the books of the assessors.

Polls and Valuation of Estates in 1880.

Wards.	Polls.	Personal.	Real Estate.	Total.	Dwellings.
Ward 1 . .	1,979	$4,519,750	$10,197,600	$14,717,350	1,414
" 2 . .	3,510	3,292,220	9,752,300	13,044,520	2,262
" 3 . .	2,561	1,354,690	5,722,400	7,077,090	1,366
" 4 . .	3,203	1,461,300	7,227,000	8,688,300	2,098
" 5 . .	1,226	961,200	4,598,100	5,559,300	917
Annexed Territory,	165	110,500	432,000	542.500	108
Total,	12,644	$11,699,660	$37,929,400	$49,629,060	8,165

Polls and Valuation of Estates in 1879.

Wards.	Polls.	Personal.	Real Estate.	Total.	Dwellings.
Ward 1 . .	1,968	$5,035,045	$10,401,200	$15,436,245	1,500
" 2 . .	3,301	3,154,900	9,658,200	12,813,100	2,304
" 3 . .	2,480	1,373,753	5,636,200	7,009,953	1,363
" 4 . .	2,938	1,446,500	7,009,700	8,456,200	2,044
" 5 . .	1,205	882,700	4,639,900	5,522,600	926
Total,	11,892	$11,892,898	$37,345,200	$49,238,098	8,137

By a change in the mode of counting dwellings in the city, the assessors have made it appear that there are not as many houses in some of the wards as in 1879. The actual increase has, however, been in about the same proportion as in previous years.

It therefore appears that the total valuation of real and personal estate in this city was —

May 1, 1880	$49,629,060
May 1, 1879	49,238,098
Increase in 1880	$390,962

The increase as above shown is apparent only, as, by deducting the above amount from the valuation of estates annexed from the town of Belmont, there appears to have been a decrease in the valuation as appraised in 1879, as follows: —

Valuation of property annexed	$542,500
Less amount of increase in the total valuation of 1880	390,962
Actual decrease of valuation in 1880 . . .	$151,538

The total amount assessed upon the foregoing valuations, and the poll taxes were —

In 1879	$869,359 00
In 1880	826,079 23
Decrease of taxation in 1880 .	$43,279 77

The amount assessed upon polls and valuations for the year 1879 is given in the report for that year as $860,831.68. It should be corrected as given above. The amounts as herein reported for 1879 and 1880 are the sums stated in the warrants of the assessors as given to the Treasurer for the respective years.

The rate of taxation in 1880 was $16.00 per $1,000, it being a reduction of $1.00 per $1,000 from the rate of the preceding year. From the rate as above fixed, there was also the discount of four per cent upon such taxes as were paid on or before Oct. 10. The actual rate upon such taxes was $15.36 per $1,000.

Your committee reviews the work of the year which is closing upon us, with a pardonable degree of pride, as it hopes, in view of the fact that the financial condition of our city has continued to prosper, and the City Council has so constantly legislated in the interest of public economy, and for the welfare of the tax-payers.

It only remains to be said, in conclusion, that the intercourse of your committee with the financial departments has been of the most pleasant character. These are in competent and faithful hands, and through them the machinery is working smoothly and harmoniously. The system of accounts now in use has proved its value with each succeeding year's experience, and needs no additional commendation expressed herein.

JAMES M. W. HALL,
D. R. SORTWELL,
NATHAN G. GOOCH,
CHARLES WALKER,
ISAAC A. NAY,
JOHN READ,
GEORGE C. BENT,
JOHN CONLAN,
SANFORD H. DUDLEY,

Committee on Finance.

ANNUAL REPORT

OF

THE AUDITOR OF ACCOUNTS.

To the Honorable City Council:

In compliance with the requirements of Sect. 4 of an Ordinance in relation to accounts and finance, the undersigned herewith submits his Third Annual Report of the financial condition of the city, embracing the period from Dec. 1, 1879, to Nov. 30, 1880.

The aggregate amount of revenue received during the year from all sources is . .	$1,533,563 76
Add amount in treasury Dec. 1, 1879 . . .	58,882 07
	$1,592,445 83
Aggregate amount expended during the year for all objects	1,562,703 36
Balance in treasury Nov. 30, 1880	$29,742 47

There has been no increase whatever in the permanent debt of the city during the year, and no portion of the funded debt has matured.

The following is a statement of the temporary loan negotiated during the year, and the rate of interest paid on the same: —

Jan. 16, 1880	$25,000 00	Interest	$3\frac{3}{4}$ per cent.
" "	25,000 00	"	$3\frac{3}{4}$ "
" "	25,000 00	"	$3\frac{3}{4}$ "
" "	10,000 00	"	$3\frac{3}{4}$ "
" "	10,000 00	"	$3\frac{3}{4}$ "
" "	5,000 00	"	$3\frac{3}{4}$ "
Feb. 10, "	20,000 00	"	$3\frac{1}{2}$ "
" "	20,000 00	"	$3\frac{1}{2}$ "
March 9, "	30,000 00	"	$3\frac{1}{2}$ "
April 12, "	65,000 00	"	$4\frac{1}{4}$ "
June 9, "	40,000 00	"	3 "
July 1, "	75,000 00	"	$2\frac{7}{8}$ "
Total	$350,000 00		

These notes were all due and paid Oct. 10, 1880.

THE CITY DEBT.

	1880.	1879.
Funded loan	$3,254,000 00	$3,254,000 00
Funded water loan	1,528,700 00	1,528,700 00
Trust Funds	26,000 00	26,000 00
* State and county taxes	78,363 53	42,501 52
	$4,887,063 53	$4,851,201 52

The *net* city and water debt Nov. 30, 1880, as compared with the same debt Nov. 30, 1879, is as follows: —

	1880.	1879.
Gross debt as above	$4,887,063 53	$4,851,201 52
Less amount in both sinking funds and cash in treasury	1,677,870 66	1,437,858 70
	$3,209,192 87	$3,413,342 82

* Although the sum of $52,155.00 represents the annual State tax due from the city, yet the revenue from the State for "Corporation" and "Bank Tax" will more than offset the sum mentioned, and the balance shows in favor of the city.

Decrease of net debt, Nov. 30, 1880, $204,149.95.

The means for paying the funded debt have been increased during the year as follows: —

Amount of both sinking funds Nov. 30, 1879		$1,378,976 63
Amount appropriated by City Council in 1880	$210,720 00	
Interest accumulations during the year	58,431 56	
		269,151 56
Amount of fund Nov. 30, 1880,		$1,648,128 19

THE FUNDED DEBT.

Following is a statement of the total funded debt of the city, with the dates of maturity and rate of interest thereon: —

Bridge Loan.

Due July 1, 1884, interest 6 per cent . .	$94,000	
July 1, 1885, " 6 " . .	26,000	
		$120,000

Building Loan.

Due July 1, 1883, interest 6 per cent . .	$119,000	
April 1, 1884, " 6 " . .	198,000	
July 1, 1885, " 6 " . .	17,000	
		334,000

City Loan.

Due July 1, 1881, interest 6 per cent . .	$100,000	
Aug. 1, 1882, " 5 " . .	30,000	
Sept. 10, 1882, " 5 " . .	40,000	
Nov. 20, 1882, " 5 " . .	14,000	
July 1, 1886, " 6 " . .	100,000	
April 1, 1889, " 5 " . .	100,000	
July 1, 1890, " 6 " . .	20,000	
Jan. 1, 1893, " 5 " (gold)	150,000	
		554,000
Amount carried forward		$1,008,000

Amount brought forward		$1,008,000
Funding Loan.		
Due April 1, 1883, interest 6 per cent . .	$216,000	
July 1, 1884, " 6 " . .	100,000	
July 1, 1885, " 6 " . .	24,000	
		340,000
Land Loan.		
Due July 1, 1893, interest 6 per cent . .	$10,000	
		10,000
Low-Land Loan.		
Due July 1, 1882, interest 6 per cent . .	$15,000	
July 1, 1883, " 6 " . .	270,000	
April 1, 1884, " 6 " . .	240,000	
Oct. 1, 1884, " 6 " . .	56,000	
July 1, 1885, " 6 " . .	122,000	
July 1, 1886, " 6 " . .	60,000	
Oct. 1, 1887, " 5 " . .	120,000	
		883,000
Paving Loan.		
Due July 1, 1893, interest 6 per cent . .	$100,000	
July 1, 1894, " 6 " . .	130,000	
July 1, 1895, " 6 " . .	25,000	
		255,000
Sewer Loan.		
Due Oct. 1, 1895, interest 6 per cent . .	$20,000	
July 1, 1896, " 6 " . .	29,000	
July 1, 1903, " 6 " . .	136,000	
July 1, 1904, " 6 " . .	295,000	
July 1, 1905, " 6 " . .	144,000	
		624,000
Street Loan.		
Due July 1, 1893, interest 6 per cent . .	$13,000	
		13,000
Amount carried forward		$3,133,000

Amount brought forward	$3,133,000

Street-widening Loan.

Due July 1, 1886,	interest	6	per cent	$7,000	
July 1, 1903,	"	6	"	10,000	
July 1, 1904,	"	6	"	90,000	
July 1, 1905,	"	6	"	14,000	
					121,000

Water Loan.

Due May 1, 1875,	interest	6	per cent	$200	
July 1, 1881,	"	6	"	50,000	
Aug. 1, 1883,	"	6	"	55,000	
July 2, 1886,	"	6	"	100,000	
April 1, 1887,	"	6	"	150,000	
April 1, 1888,	"	6	"	175,000	
May 1, 1889,	"	6	"	112,000	
July 1, 1890,	"	6	"	60,000	
May 1, 1891,	"	6	"	50,000	
July 1, 1892,	"	6	"	335,000	
April 1, 1894,	"	6	"	150,000	
April 1, 1895,	"	6	"	160,000	
July 1, 1896,	"	6	"	103,000	
July 1, 1897,	"	6	"	16,000	
July 1, 1898,	"	5	"	12,500	
					1,528,700
Total funded debt					$4,782,700

Dates of Maturity — Funded Loan.

Following is a statement of the total funded debt, showing the amount of bonds due and payable each year until all mature: —

1875	$200
1881	150,000
Amount carried forward	$150,200

Amount brought forward	$150,200
1882	99,000
1883	660,000
1884	688,000
1885	189,000
1886	267,000
1887	270,000
1888	175,000
1889	212,000
1890	80,000
1891	50,000
1892	335,000
1893	273,000
1894	280,000
1895	205,000
1896	132,000
1897	12,500
1898	16,000
1903	146,000
1904	385,000
1905	158,000
	$4,782,700

LIABILITIES AND ASSETS.

Liabilities.

Funded city loan	$3,254,000 00
Funded water loan	1,528,400 00
State tax	52,155 00
County tax	26,208 53
National-bank tax	5,581 11
Trust funds	26,000 00
Amount due State for liquor licenses	5,423 95
	$4,897,768 59

Assets.

Cash in treasury	$29,742 47
Amount in sinking funds	1,233,559 71
Amount carried forward	$1,263,302 18

Amount brought forward	$1,263,302 18
Amount in sinking fund water works	414,568 48
Notes receivable secured by mortgage	7,411 00
City lands available for market	79,083 00
Uncollected taxes 1878, 1879, 1880	90,781 86
Uncollected sewer assessments	492 36
Uncollected grading assessments	2,177 08
State aid from Commonwealth	14,704 47
Corporation tax from Commonwealth	38,936 31
National-bank tax from Commonwealth	21,190 89
Uncollected water bills	1,025 71
Uncollected miscellaneous bills	1,434 91
Surrendered estates (sale account)	147,576 32
	$2,082,684 57
Balance of liabilities over assets	$2,815,084 02

RECEIPTS.

The receipts of the year, as credited to the several city accounts, are shown as follows: —

No.		
1.	Abatements and Discounts	$10 00
2.	Bills Receivable	850 00
3.	Bridges (West Boston, Craigie's, and Prison Point)	78 92
4.	Cambridge Public Library	2,326 77
5.	Cemeteries	10,219 14
6.	Cemetery Fund	450 00
7.	City Lands	250 00
8.	Fire Department	517 87
9.	Incidental Expenses	26,930 05
10.	Interest	3,218 19
11.	Lighting Streets	36 59
12.	Loan, Temporary	350,000 00
13.	Pauper Department	5,573 79
14.	Pauper Department (Almshouse)	3,302 72
15.	Pauper Department (House Offal)	4,847 64
16.	Pike, James	1,000 00
17.	Police Department	2,245 62
18.	School Department (Salaries)	1,323 72
	Amount carried forward	$413,181 02

	Amount brought forward	$413,181 02
19.	School-Houses (Care and Repair)	38 88
20.	Sewers (Construction)	2,552 98
21.	Sewers (Maintenance)	16 00
22.	Shade Trees and Public Grounds	68 25
23.	State Aid	15,560 87
24.	Street Department (Paving)	11 00
25.	Street Department (Repairs)	473 99
26.	Street Department (Watering)	9,215 29
27.	Surrendered Estates	5,700 44
28.	Surrendered Estates (Care and Repair)	2,755 25
29.	Surrendered Estates (Sale Account)	14,038 10
30.	Tax, Corporation	26,455 97
31.	Tax, National-Bank	15,194 92
32.	Taxes of 1878	1,814 67
33.	Taxes of 1879	86,695 45
34.	Taxes of 1880	753,544 58
35.	Tax Lien Account	6,720 99
36.	Water Works (Rates, Fines, etc.)	175,762 59
37.	Water Works (Supplies)	3,762 52
	Total	$1,533,563 76

EXPENSES.

The expenditures of the year, as charged to the several city accounts, are shown as follows : —

No.		
1.	Abatements and Discounts	$46,215 27
2.	Bridges	2,292 18
3.	Bridges (West Boston, Craigie's, and Prison Point) .	5,563 01
4.	Cambridge Public Library	5,999 77
5.	Cemeteries	10,256 81
6.	Engineering	5,780 60
7.	Fire Department	61,955 75
8.	Health Department	1,290 16
9.	Incidental Expenses	28,602 63
10.	Interest	198,552 77
11.	Interest on Water Loan	91,756 00
12.	Lighting Streets	19,270 06
13.	Loan, Temporary	350,000 00
14.	Pauper Department	15,162 69
15.	Pauper Department (Almshouse)	16,581 59
16.	Pauper Department (House Offal)	6,731 18
17.	Police Deparment	56,083 61
18.	Salaries	21,208 23
	Amount carried forward	$943,302 31

	Amount brought forward	$943,302 31
19.	School Department (Drawing Schools)	705 50
20.	School Department (Evening Schools)	439 00
21.	School Department (Incidental Expenses)	1,369 31
22.	School Department (Salaries)	130,371 75
23.	School Department (Text-Books and Stationery) . .	3,450 87
24.	School-Houses (Care and Repair)	26,711 63
25.	Sewers (Construction)	3,308 01
26.	Sewers (Maintenance)	10,554 40
27.	Shade Trees and Public Grounds	3,640 10
28.	Sinking Funds	164,865 00
29.	Sinking Fund of Water Works	45,855 00
30.	State Aid	18,429 69
31.	Stationery and Printing	3,599 53
32	Street Department (Paving)	5,993 76
33.	Street Department (Repairs)	55,535 86
34.	Street Department (Watering)	18,938 46
35.	Surrendered Estates	20,114 51
36.	Surrendered Estates (Care and Repair)	1,469 27
37.	Surrendered Estates (Sale Account)	44 00
38.	Tax, National-Bank	5,832 83
39.	Tax, County	25,116 52
40.	Tax, State	17,385 00
41.	Tax Lien Account	1,162 68
42.	Water Works (Construction)	25,234 04
43.	Water Works (Maintenance)	25,865 49
44.	Water Works (Rates, Fines, etc.)	1,413 63
45.	Water Works (Supplies)	1,995 21
		$1,562,703 36

A detailed statement of the receipts and expenditures under each head of appropriation, together with the amount appropriated and the balances unexpended, is given in the following pages.

Respectfully submitted,

SAMUEL E. CHANDLER,
Auditor of Accounts.

AUDITOR'S OFFICE, CITY HALL,
Dec. 29, 1880.

Recapitulation of Appropriations, Receipts, and Expenditures for Year ending Nov. 30, 1880.

CITY ACCOUNTS.	Appropriations.	Receipts.	Total.	Amount Transferred to.	Amount Transferred from.	State of Appropriation, Nov. 30, 1880.	Expended.	Balances Unexpended.
Abatements and Discounts	$52,000 00	$10 00	$52,010 00	.....	$2,900 00	$49,110 00	$46,215 27	$2,894 73
Bridges	2,800 00	.....	2,800 00	.....	500 00	2,300 00	2,292 18	7 82
Bridges (West Boston, Craigie's, and Prison Point),	6,000 00	78 92	6,078 92	.....	.....	6,078 92	5,563 01	515 91
Cambridge Public Library	4,000 00	2,326 77	6,326 77	.....	.....	6,326 77	5,999 77	327 00
Cemeteries	500 00	10,219 14	10,719 14	$260 00	.....	10,979 14	10,256 81	722 33
Engineering	6,200 00	.....	6,200 00	.....	.....	6,200 00	5,780 60	419 40
Fire Department	61,800 00	517 87	62,317 87	.....	.....	62,317 87	61,955 75	362 12
Health Department	2,000 00	.....	2,000 00	.....	20 00	1,980 00	1,290 16	689 84
Incidental Expenses	13,000 00	26,930 05	39,930 05	.....	1,502 50	38,427 55	28,602 63	9,824 92
Interest	200,000 00	3,218 19	203,218 19	.....	.....	203,218 19	198,552 77	4,665 42
Interest on Water Loan	.....	.....	.....	91,756 00	.....	91,756 00	91,756 00	
Lighting Streets	20,000 00	36 59	20 036 59	2 50	500 00	19,539 09	19,270 06	269 03
Pauper Department	14,000 00	5,573 79	19,573 79	.....	500 00	19,073 79	15,162 69	3,911 10
Pauper Department (Almshouse)	16,700 00	3,302 72	20,002 72	.....	560 00	19,442 72	16,581 59	2,861 13
Pauper Department (House Offal)	2,000 00	4,847 64	6,847 64	800 00	.....	7,647 64	6,731 18	916 46
Police Department	58,000 00	2,245 62	60,245 62	.....	3,200 00	57,045 62	56,083 61	962 01
Salaries	21,325 00	.....	21,325 00	.....	.....	21,325 00	21,208 23	116 77
School Department (Drawing Schools)	725 00	.....	725 00	.....	.....	725 00	705 50	19 50
School Department (Evening Schools)	600 00	.....	600 00	.....	.....	600 00	439 00	161 00
School Department (Incidentals)	1,650 00	.....	1,650 00	.....	.....	1,650 00	1,369 31	280 69
School Department (Salaries)	132,500 00	1,323 72	133,823 72	.....	2,300 00	131,523 72	130,371 75	1,151 97
School Department (Text Books and Stationery)	3,600 00	.....	3,600 00	.....	.....	3,600 00	3,450 87	149 13
School-Houses (Care and Repair)	24,000 00	38 88	24,038 88	2,950 00	.....	26,988 88	26,711 63	277 25
Sewers (Construction)	4,000 00	2,552 98	6,552 98	20 00	2,700 00	3,872 98	3,308 01	564 97
Sewers (Maintenance)	8,000 00	16 00	8,016 00	2,700 00	.....	10,716 00	10,554 40	161 60
Shade Trees and Public Grounds	3,200 00	68 25	3,268 25	500 00	.....	3,768 25	3,640 10	128 15
Sinking Funds	164,865 00	.....	164,865 00	.....	.....	164,865 00	164,865 00	
Sinking Fund of Water Works	.....	.....	.....	45,855 00	.....	45,855 00	45,855 00	
State Aid	.....	15,560 87	15,560 87	2,900 00	.....	18,460 87	18,429 69	31 18
Stationery and Printing	3,000 00	.....	3,000 00	1,000 00	.....	4,000 00	3 599 53	400 47
Street Department (Paving)	6,000 00	11 00	6,011 00	.....	.....	6,011 00	5,993 76	17 24
Street Department (Repairs)	56,700 00	473 99	57,173 99	.....	1,460 00	55,713 99	55,535 86	178 13
Street Department (Watering)	8,000 00	9,215 29	17,215 29	3,660 00	500 00	20,375 29	18,938 46	1,436 83
Surrendered Estates	12,200 00	5,700 44	17,900 44	2,300 00	.....	20,200 44	20,114 51	85 93
Surrendered Estates (Care and Repair)	.....	2,755 25	2,755 25	.....	450 00	2,305 25	1,469 27	835 98
Water Works (Construction)	30,000 00	.....	30,000 00	.....	.....	30,000 00	25,234 04	4,765 96
Water Works (Maintenance)	5,000 00	.....	.....	25,000 00	.....	30,000 00	25,865 49	4,134 51
Water Works (Rates, Fines, etc.)	.....	175,762 59	175,762 59	.....	162,611 00	13,151 59	1,413 63	11 737 96
Water Works (Supplies)	.....	3,762 52	3,762 52	.....	.....	3,762 52	1,995 21	1,767 31
Totals	$944,365 00	$276,549 08	$1,215,914 08	$179,703 50	$179,703 50	$1,220,914 08	$1,163,162 33	$57,751 75

DETAILED STATEMENT.

SHOWING RECEIPTS AND EXPENDITURES AND AMOUNTS APPROPRIATED UNDER EACH CITY ACCOUNT FOR THE FINANCIAL YEAR ENDING NOV. 30, 1880.

Abatements and Discounts.

Amount appropriated		$52,000 00
Deduct amount transferred		2,900 00
		$49,100 00
RECEIVED.		
For error in entry		10 00
		$49,110 00
EXPENDED.		
For Abatements of taxes	$17,753 70	
Discount on taxes	28,461 57	
Total, as per item No. 1 of expenses		46,215 27
Balance unexpended		$2,894 73

Bills Receivable.

RECEIVED.

For amount on account of mortgage notes held by city for surrendered estates (sale account) as per item No. 2 of receipts	$850 00

Bridges.

Amount appropriated	$2,800 00
Deduct amount transferred	500 00
	$2,300 00
Amount carried forward	$2,300 00

Amount brought forward		$2,300 00
EXPENDED.		
For Draw hoisting	$392 50	
Hardware and tools	54 50	
Iron work	11 25	
Labor as per roll	746 88	
Lumber	1,062 45	
Repairs (general)	24 60	
Total, as per item No. 2 of expenses		2,292 18
Balance unexpended		$7 82

Bridges (West Boston, Craigie's, and Prison Point).

Amount appropriated		$6,000 00
RECEIVED.		
For Wharfage	$37 50	
Draw sheathing	41 42	
Total, as per item No. 3 of receipts		78 92
		$6,078 92
EXPENDED.		
For Boiler and fittings	$146 61	
Commissioner, E. Parmenter, salary	499 99	
Engineer, Civil, services of . .	75 00	
Flag	5 00	
Fuel	170 01	
Gas	821 54	
Hardware and tools	73 48	
Iron work	141 40	
Labor as per roll	2,079 40	
Lumber	496 83	
Oil	15 08	
Amounts carried forward . . .	$4,524 34	$6,078 92

Amounts brought forward . . .	$4,524 34	$6,078 92
For Paving	265 69	
Repairs (general)	305 05	
Stationery	2 75	
Sweeping and cleaning	150 68	
Water rates	14 50	
Watering (roadway)	300 00	
Total, as per item No. 3 of expenses		5,563 01
Balance unexpended		$515 91

Cambridge Public Library.

Amount appropriated		$4,000 00
RECEIVED.		
For Catalogues and fines	$152 79	
Dog licenses from county	2,173 98	
Total, as per item No. 4 of receipts		2,326 77
		$6,326 77
EXPENDED.		
For Assistants, services of	$1,820 70	
Binding books, etc.	312 50	
Books	1,239 81	
Directory	2 50	
Expressage.	9 35	
Furniture and repairs	66 70	
Gas	302 38	
Hardware and tools	4 28	
Ice	15 00	
Librarian, services of	600 00	
Magazines and papers	138 08	
Printing	390 92	
Rent of rooms	1,000 00	
Repairs, general	58 77	
Stationery	29 78	
Water rates	9 00	
Total, as per item No. 4 of expenses		5,999 77
Balance unexpended		$327 00

Cemeteries.

Amount appropriated		$500 00
Add amount transferred		260 00
		$760 00

RECEIVED.

For Sale and care of lots	$8,511 64	
Burial fees	1,707 50	
Total, as per item No. 5 of receipts		10,219 14
		$10,979 14

EXPENDED.

For Ashes	$230 00	
Brick	11 00	
Car tickets	20 00	
Cement	47 60	
Disinfectant	8 00	
Fence	22 25	
Fuel	4 36	
Grave covers	93 27	
Hardware and tools	148 69	
Labor as per roll	6,228 44	
Lawn mower	17 00	
Lumber	57 03	
Loam	376 01	
Plants	279 63	
Printing	23 73	
Sodding and manure	747 53	
Stationery	19 66	
Superintendent, services of	1,299 97	
Stone posts	158 91	
Stone work	17 05	
Tablets	161 00	
Teaming	96 07	
Water rates	189 61	
Total, as per item No. 5 of expenses		10,256 81
Balance unexpended		$722 33

Cemetery Fund.

Amount of fund, Nov. 30, 1879	$1,950 00
RECEIVED.	
For perpetual care of lots in Cambridge Cemetery, as per item No. 6 of receipts	450 00
Amount of fund, Nov. 30, 1880	$2,400 00

City Lands.

RECEIVED.	
For land on Cambridge Street, as per item No. 7 of receipts	$250 00

Engineering.

Amount appropriated		$6,200 00
EXPENDED.		
For Assistants, services of	$2,810 10	
Bounds, stone	45 50	
Carriage hire	52 91	
Car tickets and fares	101 00	
Directory	2 50	
Expressage	30	
Hardware and tools	18 88	
Instruments, repairs of	49 86	
Land marks	25 00	
Lithogram	9 00	
Plans, mounting	26 70	
Printing	39 51	
Salary, W. S. Barbour, engineer	2,499 99	
Shawsheen River examination	91 10	
Teaming	8 25	
Total, as per item No. 6 of expenses		5,780 60
Balance unexpended		$419 40

Fire Department.

Amount appropriated		$61,800 00
RECEIVED.		
For Rent of tenements	$191 69	
Manure	99 00	
Old material	102 18	
Horse	125 00	
Total, as per item No. 8 of receipts		517 87
		$62,317 87
EXPENDED.		
For Alarms for fires	$52 00	
Apparatus, repairs of	837 48	
Bedding	67 29	
Car tickets	10 00	
Directory	2 50	
Damage to wagon	22 85	
Drains	224 49	
Enginemen, services of	28,803 72	
Expressage	35 95	
Fuel	1,091 99	
Gas	1,145 78	
Hardware and tools	92 33	
Harnesses and repairs	174 77	
Hats and badges	63 00	
Hay, grain, and straw	2,312 88	
Horse	525 00	
Horse-shoeing	388 72	
Horse hire	421 13	
Houses, repairs of	1,294 44	
Hose and repairs	2,161 56	
Hydrants, labor on	143 76	
Hydrant	49 25	
Ice	63 30	
Medicines, horse	11 27	
Printing	19 50	
Refreshments at fires	58 56	
Amounts carried forward	$61,955 75	$62,317 87

Amounts brought forward . . .	$61,955 75	$62,317 87
For Rent	90 00	
Salary T. J. Casey, chief engineer,	999 99	
Salary R. F. Tobin, assistant engineer	249 99	
Salary N. W. Bunker, assistant engineer	249 99	
Salary C. W. Brackett, assistant engineer	249 99	
Supplies at houses	160 58	
Telegraph supplies and repairs .	1,738 43	
Veterinary services	124 00	
Washing	334 26	
Water rates	165 00	
Water for hydrants	17,520 00	
Total, as per item No. 7 of expenses		61,955 75
Balance unexpended		$362 12

Health Department.

Amount appropriated	$2,000 00
Deduct amount transferred	20 00
	$1,980 00

EXPENDED.

For Advertising	$23 65	
Car tickets	30 00	
Clerk of board, services of . . .	150 00	
Directory	2 50	
Disinfectant	29 96	
Expressage	1 10	
Legal expenses	15 00	
Printing	8 20	
Salary E. R. Cogswell, health officer (balance)	83 33	
Salary A. F. Holt, health officer,	916 67	
Stationery and stamps	14 75	
Water, analysis of	15 00	
Total, as per item No. 8 of expenses		1,290 16
Balance unexpended		$689 84

Incidental Expenses.

Amount appropriated		$13,000 00
Less amount transferred		1,502 50
		$11,497 50

RECEIVED.

For Armory rent from State	$800 00	
Collector's costs of suits	1,363 11	
Costs of suits	38 98	
County fines	38 00	
Duplicate bill refunded	15 50	
Fees and licenses, city clerk	1,348 97	
Fees, weighers'	311 27	
Fees, field drivers'	6 25	
Gas	40 82	
Licenses, grease	51 00	
Licenses, liquor	21,695 75	
License, circus	50 00	
Old material	39 72	
Release of tax titles	12 38	
Rent of public buildings	610 00	
Refund of Water Commissioners	495 50	
Repairing scale	12 80	
Total, as per item No. 9 of receipts		26,930 05
		$38,427 55

EXPENDED.

For Advertising	$193 14	
Assessors, assistant, services of	1,053 15	
Assessors, clerical assistance to	516 50	
Appraisers, services of	135 00	
Auditor, clerical assistance to	287 25	
Bells, ringing of	168 17	
Blanks and plans for assessors	47 00	
Births, taking census of	185 00	
Carriage hire	155 00	
Car tickets	280 00	
Church clocks, care of	152 75	
City clerk, clerical assistance to	200 00	
Amounts carried forward	$3,372 96	$38,427 55

	Amounts brought forward . . .	$3,372 96	$38,427 55
For	Coal, weighing	77 55	
	Costs of suit, John McGurk . .	124 09	
	Costs of suit, Charles Munroe . .	157 69	
	Costs of suit, Patrick McGurk .	124 09	
	Costs of suit, Margaret Emery .	156 09	
	Damages awarded James Brassil .	395 24	
	Damages awarded Gustavus Farley	205 00	
	Damages awarded Wm. Dickson .	300 00	
	Deaths, reporting	147 50	
	Deeds, abstract of	245 64	
	Deeds, recording	62 90	
	Directories	27 50	
	Expert witnesses	240 00	
	Expressage	26 10	
	Ex-treasurer, auditing accounts of,	200 00	
	Finance Committee, expense . .	16 40	
	Flowers	10 00	
	Gas	41 30	
	High School exhibition	24 96	
	Legal expenses	207 01	
	Maps	16 60	
	Memorial Day	500 00	
	Newspapers	14 50	
	Notices, making and distributing .	46 50	
	Page to common council, service of	50 00	
	Post-office boxes, rent	8 00	
	Printing charter and ordinances . .	623 21	
	Refreshments, committee	9 10	
	Safety vault, rent of	50 00	
	Scales, repairing	10 40	
	Sealer's expenses	204 45	
	Sinking funds, secretary's services,	25 00	
	State proportion of liquor licenses,	3,876 50	
	Stamps	6 25	
	Stone bounds	30 45	
	Taxes, collecting	451 57	
	Tax titles, invalid	508 66	
	Amounts carried forward . . .	$12,593 25	$38,427 55

	Amounts brought forward . . .	$12,593 25	$38,427 55
For	Tax, Somerville	5 73	
	Treasurer, clerical assistance to .	2,305 94	
	Voting lists, posting	21 01	
	Ward officers, services of . . .	250 00	
	Ward room, rent and care of . .	309 37	
	Water Commissioners, expenses of,	4,971 34	
	City Hall: —		
	Blank books	98 87	
	Brushes and mats	34 71	
	Fuel	260 52	
	Furnishing and supplies	102 44	
	Gas	453 40	
	Ice	159 96	
	Janitor, services of	999 96	
	Repairs, carpenter work . . .	174 86	
	Repairs, gas fixtures	19 56	
	Repairs, tools	36 13	
	Repairs, heating apparatus . . .	44 55	
	Repairs, miscellaneous	77 69	
	Repairs, painting	120 61	
	Repairs, plumbing	46 71	
	Vault in basement	292 21	
	Washing and cleaning	614 83	
	Water rates	158 00	
	Central Square Building: —		
	Cleaning materials	8 03	
	Fuel	261 60	
	Gas	234 30	
	Hardware and tools	9 57	
	Janitor, services of	1,140 00	
	Repairs, heating apparatus . . .	8 11	
	Repairs, miscellaneous	50 74	
	Water rates	191 03	
	Ward One Building: —		
	Cleaning materials	5 74	
	Fuel	388 57	
	Gas	577 46	
	Amounts carried forward . . .	$27,026 80	$38,427 55

Amounts brought forward . .	$27,026 80	$38,427 55
For Hardware and tools	6 82	
Janitor, services of	1,140 00	
Repairs, heating apparatus . .	7 71	
Repairs, miscellaneous . . .	101 93	
Water rates	319 37	
Total, as per item No. 9 of expenses		28,602 63
Balance unexpended		$9,824 92

Interest.

Amount appropriated	$200,000 00

RECEIVED.

On taxes and assessments, as per item No. 10 of receipts	3,218 19
	$203,218 19

EXPENDED.

For Dowse Institute Fund . . .	$600 00	
Daniel White charity fund . .	300 00	
Funded loan	190,360 87	
Overdrafts	120 96	
Sanders Temperance Fund . .	450 00	
Temporary loan	6,660 94	
Trustees Public Library . . .	60 00	
Total, as per item No. 10 of expenses		198,552 77
Balance unexpended		$4,665 42

Interest on Water Loan.

Amount transferred	$91,756 00

EXPENDED.

On Water Loan, as per item No. 11 of expenses,	91,756 00

Lighting Streets.

Amount appropriated		$20,000 00
Add amount transferred to		2 50
		$20,002 50
Deduct amount transferred from		500 00
		$19,502 50

RECEIVED.

For damage to lanterns, as per item No. 11 of receipts		36 59
		$19,539 09

EXPENDED.

For Alcohol	$67 80	
Burners, repairs of	57 35	
Carriage hire	8 00	
Car tickets	5 00	
Expressage	9 00	
Gas	11,982 69	
Hardware and tools	3 83	
Ladders	55 25	
Lamps, care of	5,490 19	
Lanterns, repairs of	521 21	
Oil and wicking	213 66	
Pipes and fittings	228 04	
Posts, repairs of	266 80	
Printing	11 25	
Salary B. F. Nourse, superintendent of lamps	349 99	
Total, as per item No. 12 of expenses		19,270 06
Balance unexpended		$269 03

Loan (Temporary).

RECEIVED.

For City notes issued during the year, as per item No. 12 of receipts	$350,000 00

EXPENDED.

For City notes due and paid Oct. 10, 1880, as per item No. 13 of expenses	$350,000 00

Pauper Department.

Amount appropriated	$14,000 00
Less amount transferred from	500 00
	$13,500 00

RECEIVED.

For Aid to paupers, other cities and towns	$2,482 58	
Aid to paupers, Commonwealth .	222 53	
Aid to paupers	2,358 40	
Board of persons at institutions .	510 28	
Total, as per item No. 13 of receipts		5,573 79
		$19,073 79

EXPENDED.

For Boots and shoes	$24 33	
Car tickets and fares	244 87	
Clothing	14 00	
Copyist, services of	359 01	
Directory	6 50	
Fuel	680 54	
Groceries	1,958 83	
Horse-shoeing	9 75	
Ice	12 00	
Medical attendance	386 50	
Medicines	230 78	
Paupers, aid to	180 02	
Paupers, burial of	266 93	
Paupers, aid to other cities and towns	1,007 54	
Paupers, aid to Commonwealth .	725 26	
Paupers, care of, at institutions .	6,004 03	
Paupers, transportation of . . .	14 00	
Printing	55 93	
Amounts carried forward . . .	$12,180 82	$19,073 79

	Amounts brought forward . . .	$12,180 82	$19,073 79
For	Provisions	37 60	
	Rent of tenements	323 83	
	Secretary of Board, services of .	1,200 00	
	Stationery	129 54	
	Visiting agent, services of . . .	1,200 00	
	Wagon repairs	90 90	
Total, as per item No. 14 of expenses			15,162 69
Balance unexpended			$3,911 10

Pauper Department (Almshouse).

Amount appropriated		$16,700 00
Less amount transferred from		560 00
		$16,140 00

RECEIVED.

For	Board of paupers	$281 46	
	Stone, gravel, and farm products .	3,021 26	
Total, as per item No. 14 of receipts			3,302 72
			$19,442 72

EXPENDED.

For	Bedding	$17 25	
	Boots and shoes	457 43	
	Carpeting	75 89	
	Car tickets and fares	7 00	
	Carriages and wagons, repairs of .	86 20	
	Chaplain, services of	100 00	
	Clothing	331 59	
	Crockery and wooden ware . . .	136 72	
	Dry goods	494 82	
	Expressage	2 90	
	Fish	339 68	
	Fuel	976 83	
	Furniture, repairs of	16 55	
	Gas	283 82	
	Amounts carried forward . . .	$3,326 68	$19,442 72

	Amounts brought forward . . .	$3,326 68	$19,442 72
For	Groceries	2,275 64	
	Hardware and tools	142 16	
	Harness	70 25	
	Horse-shoeing	19 25	
	Ice	16 20	
	Iron and steel	26 80	
	Labor, as per pay-roll	1,876 00	
	Labor, on farm and ledge . . .	1,146 13	
	Live stock	9 00	
	Lime and cement	10 60	
	Lumber	129 76	
	Mason work	480 09	
	Manure	99 00	
	Medicines	159 54	
	Newspapers	18 25	
	Oil	30 92	
	Organist, services of	25 00	
	Physician, services of, balance . .	66 67	
	Plumbing	176 56	
	Powder and fuse	116 70	
	Printing	13 50	
	Provisions	3,299 86	
	Repairs, heating apparatus . . .	14 51	
	Repairs, miscellaneous	26 05	
	Seeds and plants	54 21	
	Soap	257 38	
	Stationery	7 46	
	Tax, Somerville	804 06	
	Tobacco	125 68	
	Warden, services of	1,149 98	
	Washing	21 00	
	Water rates	517 20	
	Whitewashing	69 50	
Total, as per item No. 15 of expenses			16,581 59
Balance unexpended			$2,861 13

Pauper Department (House Offal).

Amount appropriated	$2,000 00
Add amount transferred to	800 00
	$2,800 00

RECEIVED.

For offal, as per item No. 15 of receipts	4,847 64
	$7,647 64

EXPENDED.

For Carts, repairs of	$100 40	
Grain	1,175 96	
Grease, axle	6 00	
Hardware and tools	7 96	
Harnesses and repairs	108 39	
Horse	225 00	
Horse medicines	4 00	
Horse-shoeing	162 13	
Labor, as per pay-roll	4,881 34	
Paint	38 00	
Powder	20 00	
Printing	2 00	
Total, as per item No. 16 of expenses		6,731 18
Balance unexpended		$916 46

Pike, James.

For balance due on account of his note	$2,081 00

RECEIVED.

For amount paid on account, as per item No. 16 of receipts	1,000 00
Balance due, Nov. 30, 1880	$1,081 00

Police Department.

Amount appropriated	$58,000 00
Less amount transferred from	3,200 00
Amount carried forward	$54,800 00

Amount brought forward		$54,800 00
RECEIVED.		
For Conveyance of prisoners . . .	$2 10	
Court fees from officers	57 10	
Court penalties	10 00	
Fees from Police Court	2,107 86	
Refund of officers' fees from State,	68 56	
Total, as per item No. 17 of receipts		2,245 62
		$57,045 62
EXPENDED.		
For Animals, burying of	$4 25	
Beer, analysis of	25 90	
Billies	12 50	
Boat, care of	5 00	
Buttons and straps	26 60	
Carriage hire	8 00	
Directories	12 50	
Disinfectant	25 46	
Expressage	1 60	
Food for prisoners	89 08	
Fuel	374 28	
Gas	595 47	
Hardware and tools	12 02	
Hay, grain, and straw	141 11	
Harness	13 50	
Horse	150 00	
Horse-shoeing	28 65	
Horse boarding	101 35	
Ice	49 00	
Policemen, services of	51,872 99	
Printing	20 25	
Prisoners, transportation of . .	31 32	
Repairs at station	303 34	
Repairs, telegraph	25 00	
Salary, F. W. Hagar, Chief of Police	1,599 99	
Amounts carried forward . . .	$55,529 16	$57,045 62

	Amounts brought forward . . .	$55,529 16	$57,045 62
For	Services, special, of officers . .	32 00	
	Sleigh	35 00	
	Supplies at stations	40 10	
	Surgical attendance	49 00	
	Telephone, rent of	5 00	
	Travelling expenses	243 80	
	Veterinary services	4 00	
	Washing	104 55	
	Water	41 00	
	Total, as per item No. 17 of expenses		56,083 61
	Balance unexpended		$962 01

Salaries.

Amount appropriated		$21,325 00
EXPENDED.		
Paid Samuel L. Montague, mayor (balance)	$300 00	
James M. W. Hall, mayor . .	1,500 00	
Justin A. Jacobs, city clerk . .	3,000 00	
Walter W. Pike, ass't city clerk .	999 99	
Wm. W. Dallinger, city treasurer,	3,000 00	
Wm. W. Dallinger, treasurer of sinking funds	199 99	
Samuel E. Chandler, city auditor,	1,500 00	
J. Warren Cotton, clerk of Common Council	199 99	
John McDuffie, clerk of committees	1,800 00	
Francis L. Pratt, city messenger .	1,399 99	
John W. Hammond, city solicitor,	1,999 99	
A. Z. Brown, assessor	1,299 99	
E. B. Whitman, assessor . . .	1,299 99	
A. J. Green, assessor	1,299 99	
Amounts carried forward . . .	$19,799 92	$21,325 00

Amounts brought forward . . .	$19,799 92	$21,325 00
Paid H. P. Walcott, city physician .	883 33	
Benjamin F. Nourse, sealer of weights and measures . . .	349 99	
S. P. Sharples, inspector of milk (balance)	29 16	
James H. Farrell, inspector of milk	145 83	
Total, as per item No. 18 of expenses		21,208 23
Balance unexpended		$116 77

School Department (Drawing Schools).

Amount appropriated		$725 00
EXPENDED.		
For Instruments, repairs of	$5 50	
Teachers, services of	700 00	
Total, as per item No. 19 of expenses		705 50
Balance unexpended		$19 50

School Department (Evening Schools).

Amount appropriated		$600 00
EXPENDED.		
For Janitors, services of	$48 00	
Teachers, services of	391 00	
Total, as per item No. 20 of expenses		439 00
Balance unexpended		$161 00

School Department (Incidental Expenses).

Amount appropriated		$1,650 00
EXPENDED.		
For Advertising	$10 35	
Car tickets	25 00	
Amounts carried forward . . .	$35 35	$1,650 00

Amounts brought forward . .	$35 35	$1,650 00
For Census returns	26 00	
Chemicals	8 51	
Diplomas	132 03	
Erasers	46 70	
Frame	9 25	
Globe	35 00	
Librarian and record of High Schools	200 00	
Lithogram	5 00	
Magazine	3 50	
Page to School Committee . .	15 00	
Pianos, tuning	16 00	
Printing	498 78	
Secretary of School Committee,	300 00	
Superintendent, incidental expenses of	21 69	
Table moulding	16 50	
Total, as per item No. 21 of expenses		1,369 31
Balance unexpended		$280 69

School Department (Salaries).

Amount appropriated		$132,500 00
Less amount transferred		2,300 00
		$130,200 00

RECEIVED.

For Hopkins Fund, income of . .	$767 72	
Tuition of non-resident pupils .	556 00	
Total, as per item No. 18 of receipts		1,323 72
		$131,523 72

EXPENDED.

For Superintendent of schools, salary	$2,700 00	
Teachers, salaries of	124,971 75	
Amounts carried forward . .	$127,671 75	$131,523 72

Amounts brought forward . .	$127,671 75	$131,523 72
For truant officers, services of . .	2,700 00	
Total, as per item No. 22 of expenses		130,371 75
Balance unexpended		$1,151 97

School Department (Text-Books and Stationery).

Amount appropriated		$3,600 00
EXPENDED.		
For Stationery	$1,106 52	
Text-books	2,344 35	
Total, as per item No. 23 of expenses		3,450 87
Balance unexpended		$149 13

School-Houses (Care and Repair).

Amount appropriated		$24,000 00
Add amount transferred to		2,950 00
		$26,950 00
RECEIVED.		
For old material	$38 88	
Total, as per item No. 19 of receipts to . . .		38 88
		$26,988 88
EXPENDED.		
For Blackboards, slating	$137 76	
Brushes	152 45	
Clocks and bells, repair of . .	106 70	
Erasers	10 15	
Expressage	10 54	
Fuel	5,550 22	
Furniture and repairs . . .	109 05	
Gas	137 81	
Hardware and tools	116 94	
Ink wells	38 74	
Amounts carried forward . .	$6,361 36	$26,988 88

Amounts brought forward . . .	$6,361 36	$26,988 88
For Janitors, services of	7,642 85	
Land	2,300 00	
Lumber	133 24	
Mats and shades	124 53	
Paving and grading	139 15	
Repairs, carpenter work . . .	1,048 93	
Repairs, heating apparatus . . .	897 31	
Repairs, mason work	431 87	
Repairs, painting and glazing . .	400 78	
Repairs, plumbing	239 08	
Repairs, roofs	284 37	
School-house moving	747 00	
School-house and land	4,650 00	
Supplies, janitors	52 11	
Teaming	45 25	
Watchman	52 50	
Water rates	1,152 30	
Total, as per item No. 24 of expenses		26,711 63
Balance unexpended		$277 25

Sewers (Construction).

Amount appropriated	$4,000 00
Less amount transferred	2,700 00
	$1,300 00

RECEIVED.

For assessments, as per item No. 20 of receipts .	2,552 98
	$3,852 98
Add amount transferred	20 00
	$3,872 98

EXPENDED.

For Blank-books	$16 00	
Boat, use of	2 00	
Boring	282 00	
Catch-basins	1,147 82	
Amounts carried forward . . .	$1,447 82	$3,872 98

Amounts brought forward . . .	$1,447 82	$3,872 98
For Damages	30 00	
Drain pipe	226 80	
Sewers, constructing	1,594 40	
Sewer rings	8 99	
Total, as per item No. 25 of expenses		3,308 01
Balance unexpended		$564 97

Sewers (Maintenance).

Amount appropriated	$8,000 00
Add amount transferred	2,700 00
	$10,700 00

RECEIVED.

For old wagon, as per item No. 21 of receipts . .	16 00
	$10,716 00

EXPENDED.

For Brick	$653 00	
Catch-basins, cleaning	1,265 73	
Cement	288 00	
Engine and fittings	690 65	
Fuel	80 50	
Hardware and tools	276 36	
Hose	92 00	
Iron work	32 65	
Labor	2,362 07	
Lumber	509 70	
Man-holes, repairs of	44 30	
Pile driver, use of	366 50	
Piles	142 35	
Pipe	67 56	
Rings and cover	41 09	
Sewers, cleaning	128 25	
Sewers, repairs of	3,006 65	
Sewer, pump	139 34	
Stone	75 00	
Teaming	150 50	
Amounts carried forward . . .	$10,412 20	$10,716 00

Amounts brought forward . . .	$10,412 20	$10,716 00
For Tide gate, cleaning	100 90	
Wagon, repairs	4 50	
Water	36 80	
Total, as per item No. 26 of expenses		10,554 40
Balance unexpended		$161 60

Shade Trees and Public Grounds.

Amount appropriated	$3,200 00
Add amount transferred	500 00
	$3,700 00

RECEIPTS.

For trees and plants, as per item No. 22 of receipts,	68 25
	$3,768 25

EXPENDED.

For Bath houses	$60 38	
Cemetery, Ward 1	60 75	
Fences and repairs	20 27	
Flag-poles and repairs	11 21	
Gravel	40 00	
Hardware and tools	31 82	
Hay, grain, and straw	49 49	
Horse keeping	21 00	
Horse mower	90 00	
Horse-shoeing	13 75	
Labor	1,430 45	
Lumber	17 45	
Mason work	29 00	
Painting	143 50	
Plants	22 90	
Rent of land	20 00	
Scales, repairs of	17 50	
Teaming	54 30	
Wagon repairs	30 23	
Amounts carried forward . . .	$2,164 00	$3,768 25

Amounts brought forward . .	$2,164 00	$3,768 25
For Water rates.	1,427 10	
Well sinking	49 00	
Total, as per item No. 27 of expenses		3,640 10
Balance unexpended		$128 15

Sinking Funds, Commissioners of.

Amount of funds Nov. 30, 1879	$1,025,508 61

RECEIVED.

From city treasurer, amount appropriated by the City Council .	$164,865 00	
Interest accumulations to Nov. 30, 1880	43,186 10	
		208,051 10
Amount of funds Nov. 30, 1880		$1,233,559 71

Sinking Fund of Water Works, Trustees of.

Amount of fund, Nov. 30, 1879	$353,468 02

RECEIVED.

For amount of revenue transferred from Water Works (Rates, Fines, etc.)	$45,855 00	
Interest accumulations to Nov. 30, 1880	15,245 46	
		61,100 46
Amount of fund, Nov. 30, 1880		$414,568 48

State Aid.

Amount transferred to		$2,900 00
RECEIVED.		
For Allotment from Commonwealth	$14,985 87	
Amount reimbursed from other cities and towns	575 00	
Total, as per item No. 23 of receipts		15,560 87
		$18,460 87
EXPENDED.		
For Clerical assistance to committee	$366 30	
Indigent soldiers	5,003 14	
Military aid	13,060 25	
		18,429 69
Balance unexpended		$31 18

Stationery and Printing.

Amount appropriated		$3,000 00
Add amount transferred		1,000 00
		$4,000 00
EXPENDED.		
For Blank-books	$134 12	
Printing documents	1,414 02	
Printing, miscellaneous	1,296 43	
Stationery	754 96	
Total, as per item No. 31 of expenses		3,599 53
Balance unexpended		$400 47

Street Department (Paving).

Amount appropriated		$6,000 00
RECEIVED.		
For covers	$11 00	
Total, as per item No. 24 of receipts		11 00
Amount carried forward		$6,011 00

Amount brought forward		$6,011 00
EXPENDED.		
For Brick	$207 30	
Labor, as per pay-roll	879 55	
Paving	3,649 77	
Sand	15 87	
Stone	841 52	
Stone flagging	399 75	
Total, as per item No. 32 of expenses		5,993 76
Balance unexpended		$17 24

Street Department (Repairs).

Amount appropriated		$56,700 00
Less amount transferred		1,460 00
		$55,240 00
RECEIVED.		
For Ashes and street scrapings . . .	$290 75	
Stone, gravel, etc.	121 05	
Team, use of	27 50	
Miscellaneous	34 69	
Total, as per item No. 25 of receipts		473 99
		$55,713 99
EXPENDED.		
For Advertising	$12 00	
Blankets	18 00	
Carts, repairs of	441 87	
Catch-basin	65 40	
Damages awarded Mrs. John Dudley	30 00	
Directory	2 50	
Freight	6 00	
Fuel	235 58	
Gas	85 87	
Gravel	5,467 16	
Amounts carried forward . . .	$6,364 38	$55,713 99

Amounts brought forward . . .	$6,364 38	$55,713 99
For Gravel teaming	4,741 98	
Hardware	207 26	
Horses	1,060 00	
Horse medicine	15 27	
Horse-shoeing	591 07	
Hose	9 00	
Harnesses and repairs	332 51	
Hay, grain, and straw	4,030 91	
Iron work	14 79	
Labor, as per pay-roll	31,019 66	
Land, rent of	50 00	
Lumber	276 56	
Oil and grease	82 02	
Printing	17 75	
Plumbing	14 78	
Salary B. W. Woodard, superintendent	1,699 99	
Signs, street	41 50	
Stone	4,255 69	
Stone crusher, repairs	115 13	
Tools and repairs	325 33	
Veterinary services	66 50	
Water	203 78	
Total, as per item No. 33 of expenses		55,535 86
Balance unexpended		$178 13

Street Department (Watering).

Amount appropriated	$8,000 00
Less amount transferred	500 00
	$7,500 00
Add amount transferred	3,660 00
	$11,160 00

RECEIVED.

For watering streets, from sundry persons, as per item No. 26 of receipts	9,215 29
Amount carried forward	$20,375 29

Amount brought forward		$20,375 29
EXPENDED.		
For Carts, repairs of	$330 98	
Carts, use of	59 10	
Hardware and tools	39 17	
Pumping, expenses of	1,456 54	
Stand-pipe, removing	18 52	
Teaming	34 00	
Water	6,922 27	
Watering streets	10,077 88	
Total, as per item No. 34 of expenses		18,938 46
Balance unexpended		$1,436 83

Surrendered Estates.

Amount appropriated		$12,200 00
Add amount transferred		2,300 00
		$14,500 00
RECEIVED.		
For Grading assessments, Cambridge Street District	$1,119 44	
Grading assessments, Cowperthwaite Street District . . .	424 70	
Grading assessments, Franklin Street District	171 31	
Grading assessments, Washington Street District	3,984 99	
Total, as per item No. 27 of receipts		5,700 44
		$20,200 44
EXPENDED.		
For Estates purchased	$18,893 93	
Refund of assessments	654 09	
Release of titles	566 49	
Total, as per item No. 35 of expenses		20,114 51
Balance unexpended		$85 93

Surrendered Estates (Care and Repair).

RECEIVED.

For Rents	$2,736 25	
Amount of bills refunded	10 00	
Old lumber	9 00	
Total, as per item No. 28 of receipts		$2,755 25
Less amount transferred		450 00
		$2,305 25

EXPENDED.

For Agent, services of J. R. Fairbairn (balance)	$150 00	
Agent, services of J. W. Covency,	359 52	
Car fares	4 37	
Repairs, carpenter work	110 53	
Repairs, mason work	40 71	
Repairs, miscellaneous	39 00	
Repairs, painting and glazing	65 85	
Repairs, plumbing	112 84	
Printing and posting bills	36 50	
Sewers	46 90	
Tools	7 30	
Water rates	438 25	
Whitewashing	57 50	
Total, as per item No. 36 of expenses		1,469 27
Balance unexpended		$835 98

Surrendered Estates (Sale Account).

RECEIVED.

For payments on estates, as per item No. 29 of receipts	$14,038 10

EXPENDED.

For refund of payment, as per item No. 37 of expenses	$44 00

Tax, Corporation.

RECEIVED.

For amount received from Commonwealth, as per item No. 30 of receipts	$26,455 97

Tax, National Bank.

RECEIVED.

For amount received from Commonwealth, as per item No. 31 of receipts	$15,194 92

EXPENDED.

For amount paid Commonwealth, as per item No. 38 of expenses	5,832 83
Balance in favor of city	$9,362 09

Tax, County.

EXPENDED.

For Amount paid County of Middlesex, as per item No. 39 of expenses	$25,116 52

Tax, State.

EXPENDED.

For amount paid Commonwealth, as per item No. 40 of expenses	$17,385 00

Taxes, 1878.

Amount uncollected Nov. 30, 1879	$9,034 86
Amount since added	430 48
	$9,465 34

RECEIVED.

For amount collected from sundry persons, as per item No. 32 of receipts	1,814 67
Balance uncollected Nov. 30, 1880	$7,650 67

Taxes, 1879.

Amount uncollected, Nov. 30, 1879		$95,352 28
Amount since added		1,939 71
		$97,291 99
RECEIVED.		
For amount collected from sundry persons, as per item No. 33 of receipts		86,695 45
Balance uncollected, Nov. 30, 1880 . . .		$10,596 54

Taxes, 1880.

Amount assessed, as per assessors' warrants . .		$826,079 23
RECEIVED.		
For amount collected from sundry persons, as per item No. 34 of receipts		753,544 58
Balance uncollected Nov. 30, 1880		$72,534 65

Tax Lien Account.

Balance Nov. 30, 1879		$29,474 55
EXPENDED.		
Amount, as per item No. 41 of expenses . . .		1,162 68
		$30,637 23
RECEIVED.		
For amount, as per item No. 35 of receipts . .		6,720 99
Balance, Nov. 30, 1880		$23,916 24

Water Works (Construction).

Amount appropriated		$30,000 00
EXPENDED.		
For Advertising	$14 00	
Cement	7 50	
Amounts carried forward . . .	$21 50	$30,000 00

Amounts brought forward . . .	$21 50	$30,000 00	
For Diving, submarine	75 00		
Dredging	800 00		
Engine, use of	166 75		
Experts, services for Water Commission	1,500 00		
Freight on pipe	510 00		
Gates	656 75		
Hydrants	20 00		
Iron work	688 96		
Labor, as per pay-roll	4,295 67		
Land damages	1,367 69		
Lead	695 46		
Legal services	100 00		
Lumber	2,167 05		
Meters	466 40		
Packing	42 32		
Piles	1,494 37		
Pipe	8,844 44		
Sand	36 00		
Scow and tools, use of	389 56		
Siphon, sinking	500 00		
Teaming	303 11		
Tools	93 01		
Total, as per item No. 42 of expenses		25,234 04	
Balance unexpended		$4,765 96	

Water Works (Maintenance).

Amount appropriated		$5,000 00
Add amount transferred		25,000 00
		$30,000 00

EXPENDED.

For Advertising	$4 50	
Boxes, gate and service	578 16	
Amounts carried forward . . .	$582 66	$30,000 00

	Amounts brought forward . . .	$582 66	$30,000 00
For	Car tickets	105 00	
	Chimney repairs	350 00	
	Clerical assistance	1,057 00	
	Clerk of board, salary	200 00	
	Directories	7 50	
	Diving, submarine	166 00	
	Drain, repairs	30 05	
	Expressage	54 19	
	Fuel	4,746 93	
	Gauges, repairs	35 73	
	Hardware and tools	292 19	
	Harnesses and repairs	70 10	
	Hay, grain, and straw	232 60	
	Horse clipping	3 00	
	Horse keeping	309 50	
	Horse-shoeing	69 91	
	Hose	18 50	
	Hydrants, repairs	12 64	
	Inspectors, services of	1,159 00	
	Iron-work, casting	115 19	
	Labor, as per pay-roll	9,346 33	
	Leak, tracing	5 00	
	Lime and cement	54 89	
	Lithographing	18 50	
	Lumber	373 99	
	Manure	45 25	
	Meters, repairs	64 56	
	Newspapers, subscription . . .	11 50	
	Notices, delivering	22 00	
	Oil and waste	243 43	
	Packing gaskets	60 32	
	Painting	34 91	
	Pipes and fittings	990 43	
	Plumbing	44 03	
	Printing	123 94	
	Registrar, J. W. Cotton, salary .	2,000 00	
	Amounts carried forward . . .	$23,056 77	$30,000 00

Amounts brought forward . .	$23,056 77	$30,000 00
For Seals	70 85	
Stationery	271 07	
Stone	30 80	
Stone work, leading	21 00	
Superintendent, Hiram Nevons, salary	1,800 00	
Superintendent, travelling expenses	15 50	
Teaming	88 25	
Telephone, use of	7 18	
Tools, repairing	97 81	
Tube, speaking	8 96	
Veterinary services	9 50	
Wagon repairs	92 30	
Water, analysis of	70 00	
Wall repairs	90 50	
Wharf, rent of	50 00	
Whitewashing	25 50	
Window shades	59 50	
Total, as per item No. 43 of expenses		25,865 49
Balance unexpended		$4,134 51

Water Works (Rates, Fines, etc.).

RECEIVED.

For amount of rates, fines, etc., as per item No. 36 of receipts	$175,762 59
Less amount transferred	162,611 00
	$13,151 59

EXPENDED.

For water rates refunded, as per item No. 44 of expenses	1,413 63
Balance unexpended	$11,737 96

Water Works (Supplies).

RECEIVED.

For supply pipe and fittings, as per item No. 37 of receipts	$3,762 52

EXPENDED.

For Labor, as per pay-roll	$678 73	
Pipes and fittings	1,316 48	
Total, as per item No. 45 of expenses		1,995 21
Balance unexpended		$1,767 31

REPORT

OF

THE CITY TREASURER.

OFFICE OF CITY TREASURER, CAMBRIDGE, Dec. 1, 1880.

To the Honorable the City Council:

THE undersigned herewith presents the annual report of receipts and payments in the City Treasury Department for the year ending Nov. 30, 1880. From the account current hereto appended it will be seen that the

Cash balance in the treasury, Nov. 30, 1879, was	$61,305 57
Amount received during the year ending Nov. 30, 1880, was	1,533,563 76
Total	$1,594,869 33
Payments during the year amounted to . . .	1,559,666 05
Leaving a balance in the treasury, Nov. 30, 1880, of	$35,203 28
Deducting *unpaid drafts*, as per City Auditor's report	5,460 81
And there remains a balance, as per Auditor's ledger, of	$29,742 47

Respectfully submitted,

WM. W. DALLINGER, *City Treasurer.*

City of Cambridge in Account Current from Dec. 1, 1879 to

Dr.

No.	To authorized payments charged to City Accounts as follows: —	
1.	Abatements and Discounts	$46,215 27
2.	Bridges	2,292 18
3.	Bridges (West Boston, Canal, and Prison Point)	5,543 69
4.	Cambridge Public Library	5,782 60
5.	Cemeteries	10,255 10
6.	Engineering	5,745 65
7.	Fire Department	61,852 86
8.	Health Department	1,291 96
9.	Incidental Expenses	28,461 89
10.	Interest	198,552 77
11.	Interest on Water Loan	91,756 00
12.	Lighting Streets	19,131 26
13.	Loans, Temporary	350,000 00
14.	Pauper Department	13,008 55
15.	Pauper Department (Almshouse)	16,479 46
16.	Pauper Department (House Offal)	6,746 18
17.	Police Department	56,124 35
18.	Salaries	21,208 23
19.	School Department (Drawing Schools)	705 50
20.	School Department (Evening Schools)	439 00
21.	School Department (Incidental Expenses)	1,554 08
22.	School Department (Salaries)	130,371 75
23.	School Department (Text Books and Stationery)	3,455 79
24.	School-Houses (Care and Repairs)	26,709 81
25.	Sewers (Construction)	3,323 61
26.	Sewers (Maintenance)	10,554 40
27.	Shade Trees and Public Grounds	3,915 85
28.	Sinking Funds	164,865 00
29.	Sinking Fund of Water Works	45,855 00
30.	State Aid	18,429 69
31.	Stationery and Printing	3,603 85
32.	Street Department (Paving)	5,898 96
33.	Street Department (Repairs)	55,639 88
34.	Street Department (Watering)	18,451 44
35.	Surrendered Estates	20,114 51
36.	Surrendered Estates (Care and Repairs)	1,493 75
37.	Surrendered Estates (Sale Account)	44 00
38.	Tax (National Bank)	5,832 83
39.	Tax (County)	25,116 52
40.	Tax (State)	17,385 00
41.	Tax Lien Account	1,162 68
42.	Water Works (Construction)	25,347 50
43.	Water Works (Maintenance)	25,538 81
44.	Water Works (Rates, Fines, etc.)	1,413 63
45.	Water Works (Supplies)	1,995 21
	Total payments	$1,559,666 05
	Cash balance in the Treasury, Nov. 30, 1880	35,203 28
		$1,594,869 33

Nov. 30, 1880, with William W. Dallinger, *City Treasurer.*

Cr.

No.	By Cash received and credited to City Accounts as follows: —	
1.	Abatements and Discounts	$10 00
3.	Bridges (West Boston, Canal, and Prison Point)	78 92
4.	Cambridge Public Library	2,326 77
5.	Cemeteries	10,219 14
6.	Cemetery Fund	450 00
7.	City Lands	250 00
8.	Fire Department	517 87
9.	Incidental Expenses	26,930 05
10.	Interest	3,218 19
11.	Lighting Streets	36 59
12.	Loans, Temporary	350,000 00
13.	Pauper Department	5,573 79
14.	Pauper Department (Almshouse)	3,302 72
15.	Pauper Department (House Offal)	4,847 64
16.	Pike, James	1,000 00
17.	Police Department	2,245 62
18.	School Department (Salaries)	1,323 72
19.	School-Houses (Care and Repairs)	38 88
20.	Sewers (Construction)	2,552 98
21.	Sewers (Maintenance)	16 00
22.	Shade Trees and Public Grounds	68 25
23.	State Aid	15,560 87
24.	Street Department (Paving)	11 00
25.	Street Department (Repairs)	473 99
26.	Street Department (Watering)	9,215 29
27.	Surrendered Estates	5,700 44
28.	Surrendered Estates (Care and Repairs)	2,755 25
29.	Surrendered Estates (Sale Account)	14,888 10
30.	Tax (Corporation)	26,455 97
31.	Tax (National Bank)	15,194 92
32.	Taxes of 1878	1,814 67
33.	Taxes of 1879	86,695 45
34.	Taxes of 1880	753,544 58
35.	Tax Lien Account	6,720 99
36.	Water Works (Rates, Fines, etc.)	175,762 59
37.	Water Works (Supplies)	3,762 52
	Total receipts	$1,533,563 76
	Cash balance in the Treasury, Dec. 1, 1879	61,305 57
		$1,594,869 33

WM. W. DALLINGER, *City Treasurer.*

REPORT

OF THE

COMMISSIONERS OF THE SINKING FUNDS.

To the Honorable City Council:

The undersigned, Commissioners of the Sinking Funds of the city, in compliance with Sect. 8 of an ordinance passed Dec. 22, 1875, herewith present their fifth annual report, showing the present condition of the funds to be as follows, viz. : —

Amount of the funds Dec. 1, 1879 . . .	$1,025,508 61	
Amount of interest received during the year on investments	57,879 19	
Amount of premium received during the year on bonds exchanged	4,201 25	
Amount received from the City of Cambridge, derived from taxation . . .	164,865 00	
		$1,252,454 05
Amount paid for accrued interest on bonds purchased during the year	$2,249 55	
Amount paid for premium on bonds purchased during the year	16,644 79	
		18,894 34
Amount of the funds Nov. 30, 1880, *all securities taken at par*		$1,233,559 71

The funds are composed of the following securities, viz. : —

Cambridge City Loan, five per cent bonds, maturing Sept. 10, 1882 . .	$2,000 00
Cambridge Funding Loan, six per cent bonds, maturing April 1, 1883 . . .	12,000 00
Cambridge Low-land Loan, six per cent bonds, maturing July 1, 1883 . . .	132,000 00
Amount carried forward	$146,000 00

Amount brought forward	$146,000 00	
Cambridge Building Loan, six per cent bonds, maturing July 1, 1883 . . .	27,000 00	
Cambridge Water Loan, six per cent bonds, maturing Aug. 1, 1883 . . .	2,900 00	
Cambridge Low-land Loan, six per cent bonds, maturing April 1, 1884 . . .	13,000 00	
Cambridge Building Loan, six per cent bonds, maturing April 1, 1884 . . .	20,000 00	
Cambridge Bridge Loan, six per cent bonds, maturing July 1, 1884 . . .	9,000 00	
Cambridge Funding Loan, six per cent bonds, maturing July 1, 1884 . . .	7,000 00	
Cambridge Low-land Loan, six per cent bonds, maturing Oct. 1, 1884 . . .	2,000 00	
Cambridge Funding Loan, six per cent bonds, maturing July 1, 1885 . . .	24,000 00	
Cambridge Bridge Loan, six per cent bonds, maturing July 1, 1885 . . .	26,000 00	
Cambridge Building Loan, six per cent bonds, maturing July 1, 1885 . . .	17,000 00	
Cambridge Low-land Loan, six per cent bonds, maturing July 1, 1885 . . .	122,000 00	
Cambridge Low-land Loan, six per cent bonds, maturing July 1, 1886 . . .	27,000 00	
Cambridge Street Widening Loan, six per cent bonds, maturing July 1, 1886 .	3,000 00	
Cambridge City Loan, six per cent bonds, maturing July 1, 1886	1,000 00	
Cambridge Low-land Loan, five per cent bonds, maturing Oct. 1, 1887 . . .	120,000 00	
Cambridge Sewer Loan, six per cent bonds, maturing July 1, 1896 . . .	11,000 00	
Cambridge Street Widening Loan, six per cent bonds, maturing July 1, 1904 .	90,000 00	
Cambridge Sewer Loan, six per cent bonds, maturing July 1, 1904 . . .	2,000 00	
Cambridge Street Widening Loan, six per bonds, maturing July 1, 1905 . . .	14,000 00	
Cambridge Sewer Loan, six per cent bonds, maturing July 1, 1905 . . .	49,000 00	
		$732,900 00
City of Fitchburg note, maturing Oct. 14–17, 1881	$20,000 00	
City of Boston coupon five per cent bonds, maturing Jan. 1, 1883 . . .	2,000 00	
Amounts carried forward	$22,000 00	$732,900 00

Amounts brought forward	$22,000 00	$732,900 00
City of Charlestown coupon five per cent bonds, maturing Oct. 1, 1883 . . .	2,000 00	
City of Chelsea coupon five and one half per cent bonds, maturing Oct. 15, 1883,	19,000 00	
City of Manchester, N. H., coupon six per cent bonds, maturing April 1, 1884 .	1,000 00	
Town of Weymouth four per cent bonds, maturing April 1, 1884	5,000 00	
City of Boston registered five per cent bonds, maturing July 1, 1884 . . .	1,000 00	
City of Boston coupon five per cent bonds, maturing July 1, 1884 . . .	2,000 00	
City of Lynn coupon five and one half per cent bonds, maturing Aug. 15, 1884	4,000 00	
State of Maine coupon four per cent bonds, maturing Aug. 15, 1884 . .	19,000 00	
State of New Hampshire coupon six per cent bonds, maturing Sept. 1, 1884 .	1,000 00	
City of Somerville coupon six and one half per cent bonds, maturing Oct. 1, 1884	5,000 00	
City of Roxbury coupon six per cent bonds, maturing Nov. 1, 1884 . . .	2,000 00	
Town of Holbrook four per cent bonds, maturing Nov. 10, 1884	4,000 00	
City of Boston registered five per cent bonds, maturing April 1, 1885 . . .	5,000 00	
State of Maine coupon four per cent bonds maturing Aug. 15, 1885 . . .	19,000 00	
State of Maine coupon four per cent bonds, maturing Aug. 15, 1886 . . .	24,000 00	
Town of Woburn five per cent notes, maturing July 2–5, 1887	20,000 00	
Town of Winchester coupon five per cent bonds, maturing April 1, 1888 . . .	5,000 00	
United States coupon four and one half per cent bonds, maturing after Sept. 1, 1891	57,000 00	
City of Boston coupon four per cent bonds, maturing Jan. 1, 1899 . . .	50,000 00	
City of Providence coupon four and one half per cent bonds, maturing June 1, 1899	116,000 00	
Amounts carried forward	$383,000 00	$732,900 00

Amounts brought forward	$383,000 00	$732,900 00
Town of Brookline coupon four and one half per cent bonds, maturing July 1, 1890	19,000 00	
Town of Arlington coupon five per cent bonds, maturing Nov. 1, 1892 . . .	6,000 00	
United States registered coupon four per cent bonds, maturing after July 1, 1907	70,000 00	
United States coupon four per cent bonds, maturing after July 1, 1907 .	400 00	
United States coupon five per cent bonds, maturing after May 1, 1881	11,000 00	
City of Cambridge (gravel) note, maturing July 1, 1881	2,717 46	
City of Cambridge (gravel) note, maturing July 1, 1882	2,717 46	
City of Cambridge (gravel) note, maturing July 1, 1883	2,717 46	
City of Cambridge (gravel) note, maturing July 1, 1884	2,717 46	
Cash on deposit in the First National Bank of Cambridge	389 87	
		500,659 71
		$1,233,559 71

RECAPITULATION.

Cambridge city and water bonds . . .	$732,900 00	
Cambridge (gravel) notes	10,869 84	
State, city, and town bonds and notes . .	351,000 00	
United States bonds	138,400 00	
Cash on hand	389 87	
		$1,233,559 71
The value of *accrued interest* on the securities is . . .		20,349 02
Making the actual value of the funds Nov. 30, 1880 . .		$1,253,908 73

The bonded city debt, which the foregoing sinking funds are expected to pay, matures as follows, viz. : —

July 1, 1881, City Loan Bonds	$100,000 00
July 1, 1882, Low-land Loan Bonds	15,000 00
Aug. 1, 1882, City Loan Bonds	30,000 00
Sept. 10, 1882, City Loan Bonds	40,000 00
Amount carried forward	$185,000 00

Amount brought forward	$185,000 00
Nov. 20, 1882. City Loan Bonds	14,000 00
April 1, 1883, Funding Loan Bonds	216,000 00
July 1, 1883, Building Loan Bonds	119,000 00
July 1, 1883, Low-land Loan Bonds	270,000 00
April 1, 1884, Building Loan Bonds	198,000 00
April 1, 1884, Low-land Loan Bonds	240,000 00
July 1, 1884, Bridge Loan Bonds	94,000 00
July 1, 1884, Funding Loan Bonds	100,000 00
Oct. 1, 1884, Low-land Loan Bonds	56,000 00
July 1, 1885, Bridge Loan Bonds	26,000 00
July 1, 1885, Building Loan Bonds	17,000 00
July 1, 1885, Funding Loan Bonds	24,000 00
July 1, 1885, Low-land Loan Bonds	122,000 00
July 1, 1886, City Loan Bonds	100,000 00
July 1, 1886, Low-land Loan Bonds	60,000 00
July 1, 1886, Street-widening Loan Bonds	7,000 00
Oct. 1, 1887, Low-land Loan Bonds	120,000 00
April 1, 1889, City Loan Bonds	100,000 00
July 1, 1890, City Loan Bonds	20,000 00
Jan. 1, 1893, City Loan Bonds	150,000 00
July 1, 1893, Land Loan Bonds	10,000 00
July 1, 1893, Paving Loan Bonds	100,000 00
July 1, 1893, Street Loan Bonds	13,000 00
July 1, 1894, Paving Loan Bonds	130,000 00
July 1, 1895, Paving Loan Bonds	25,000 00
Oct. 1, 1895, Sewer Loan Bonds	20,000 00
July 1, 1896, Sewer Loan Bonds	29,000 00
July 1, 1903, Sewer Loan Bonds	136,000 00
July 1, 1903, Street-widening Loan Bonds	10,000 00
July 1, 1904, Sewer Loan Bonds	295,000 00
July 1, 1904, Street-widening Loan Bonds	90,000 00
July 1, 1905, Sewer Loan Bonds	144,000 00
July 1, 1905, Street-widening Loan Bonds	14,000 00
	$3,254,000 00

No portion of the city debt became due the past year, and consequently the fund shows a large increase, amounting to $208,051.10, making the total amount of the fund $1,233,-559.71. Hereafter some portion of the city debt will mature each year until 1888, and will be paid from this fund, so that this large increase in the future will not appear. The average rate of interest on the securities as invested is $5\frac{26}{100}$ per cent. It is now found impossible to invest the fund in first-class securities to earn more than three and one half to four per cent

interest, instead of six, the rate upon which the fund is based; and the attention of the City Council is respectfully called to consider whether the annual sum paid by the city should not be increased to make up this deficiency.

All of the above securities which are negotiable are deposited in a safety vault in Boston.

Respectfully submitted,

CHAS. H. SAUNDERS,
ROBT. DOUGLASS,
J. A. HOLMES,
JOHN M. TYLER,
FRANK A. ALLEN,
K. S. CHAFFEE,

Commissioners of the Sinking Funds of the City.

CAMBRIDGE, Dec. 22, 1880.

REPORT

OF THE

TRUSTEES OF THE SINKING FUND OF THE CAMBRIDGE WATER WORKS.

To the Honorable the City Council:

The undersigned, Trustees of the Sinking Fund of the Cambridge Water Works, herewith submit the Annual Report of the fund committed by ordinance to their charge: —

The amount of the fund, Dec. 1, 1879, was	$353,468 02	
There have been received during the year interest on investments amounting to	19,928 89	
There has been received from the City of Cambridge, being three per cent on amount of outstanding Water Bonds,	45,855 00	
		$419,251 91
Amount paid for accrued interest on securities purchased	$407 50	
Amount paid for premium on securities purchased	4,275 93	
		4,683 43
Amount of the fund, Nov. 30, 1880, all securities at par,		$414,568 48

The increase of the fund during the year has been $61,100.46. This increase, while somewhat less than that reported last year, is nevertheless accounted for by the increased amount paid for premium on investments made.

The following are the securities belonging to the Fund: —

Cambridge Low-land Loan, six per cent coupon bonds, maturing July 1, 1883,	$1,000 00	
Cambridge Water, six per cent coupon bonds, maturing Aug. 1, 1883 . . .	1,400 00	
Cambridge City, six per cent coupon bonds, maturing April 1, 1884 . . .	3,000 00	
Cambridge Water, six per cent coupon bonds, maturing April 1, 1887 . . .	6,000 00	
Cambridge Water, six per cent coupon bonds, maturing April 1, 1888 . . .	25,000 00	
Cambridge Water, six per cent coupon bonds, maturing May 1, 1889 . . .	6,000 00	
Cambridge Water, six per cent coupon bonds, maturing July 1, 1890 . . .	31,000 00	
Cambridge Water, six per cent coupon bonds, maturing May 1, 1891 . . .	26,000 00	
Cambridge Water, six per cent coupon bonds, maturing July 1, 1892 . . .	1,000 00	
Cambridge Water, six per cent coupon bonds, maturing April 1, 1895 . . .	37,000 00	
Cambridge Water, six per cent coupon bonds, maturing July 1, 1896 . . .	46,000 00	
Cambridge Water, six per cent coupon bonds, maturing July 1, 1897 . . .	16,000 00	
Cambridge Water, five per cent registered coupon bonds, maturing July 1, 1898 .	12,500 00	
		$211,900 00
United States five per cent coupon bonds, maturing after May 1, 1881	$54,500 00	
City of Providence five per cent registered bonds, maturing Sept. 1, 1882 . . .	42,000 00	
State of Connecticut six per cent coupon bonds, maturing Jan. 1, 1883 . . .	1,000 00	
City of Providence five per cent registered bonds, maturing Sept. 1, 1883 . . .	5,000 00	
City of Charlestown five per cent coupon bonds, maturing Oct. 1, 1883 . . .	1,000 00	
City of Boston five per cent coupon bonds, maturing April 1, 1885	8,000 00	
City of Boston five per cent coupon bonds, maturing Jan. 1, 1886	1,000 00	
City of Burlington, Vt., six per cent coupon bonds, maturing July 1, 1886 . .	500 00	
City of Gloucester four and one half per cent coupon bonds, maturing July 1, 1890	5,000 00	
Amounts carried forward	$118,000 00	$211,900 00

Amounts brought forward	$118,000 00	$211,900 00
City of Fall River five per cent coupon bonds, maturing May 1, 1898 . . .	2,000 00	
Town of Pawtucket, R. I., five per cent coupon bonds, maturing April 1, 1899,	25,000 00	
City of Providence four and a half per cent coupon bonds, maturing June 1, 1899,	3,000 00	
City of Boston four per cent registered bonds, maturing April 1, 1900 . . .	4,000 00	
City of Fall River four per cent coupon bonds, maturing Aug. 1, 1900 . . .	13,000 00	
United States four per cent coupon bonds, maturing after July 1, 1907	37,500 00	
		202,500 00
		$414,400 00
Cash balance in First National Bank, Cambridge . . .		168 48
		$414,568 48

RECAPITULATION.

Cambridge Water Bonds at six per cent,	$195,400 00	
Cambridge Water Bonds at five per cent,	12,500 00	
Cambridge Low-land Loan Bonds at six per cent	4,000 00	
City and Town Bonds at six per cent . .	1,000 00	
City and Town Bonds at five per cent . .	87,500 00	
City and Town Bonds at four and one half per cent	5,000 00	
City and Town Bonds at four per cent .	17,000 00	
United States Bonds at four per cent . .	37,500 00	
United States Bonds at five per cent . .	54,000 00	
		$414,400 00
Cash Balance in First National Bank		168 48
		$414,568 48

The Bonded Water Debt, which the foregoing fund is expected to pay, matures as follows, viz. : —

July 1, 1881	$50,000 00
Aug. 1, 1883	55,000 00
July 2, 1886	100,000 00
April 1, 1887	150,000 00
April 1, 1888	175,000 00
May 1, 1889	112,000 00
July 1, 1890	60,000 00
May 1, 1891	50,000 00
Amount carried forward	$752,000 00

Amount brought forward	$752,000 00
July 1, 1892	335,000 00
April 1, 1894	150,000 00
April 1, 1895	160,000 00
July 1, 1896	103,000 00
July 1, 1897	16,000 00
July 1, 1898	12,500 00
	$1,528,500 00

JAMES M. W. HALL,
CHARLES WALKER,
WM. W. DALLINGER,
} *Trustees of the Sinking Fund of the Cambridge Water Works.*

REPORT

OF THE

JOINT STANDING COMMITTEE ON PUBLIC PROPERTY.

It is a matter of considerable satisfaction to your committee, in presenting its final report for the year 1880, that although, owing to unforeseen circumstances, it was obliged to incur extraordinary expenses in some of the departments under its supervision, the ordinary expenditures in the same departments have yet been considerably less than during the preceding year. While your committee has exercised the utmost vigilance to prevent any unnecessary outlay of the public money, however slight, it has also been especially careful that none of the property placed in its charge should suffer waste for want of necessary and timely repairs. In all instances where such work has been required to any considerable extent, the same has been open to competition, and the endeavor has been made to obtain the most responsible workmen and at the lowest prices. Heretofore the Committee on Public Property has had the general care of the following kinds of city property, viz. : —

Public squares, the expenses of which were chargeable to the appropriation for shade trees and public grounds ; school-houses, whose expenses are charged to care and repairs of school-houses ; the almshouse, so far as relates to repairs thereon, the same being carried to the pauper account ; the various city buildings, engine-houses, and police stations, the expenses incurred upon the last three classes of property being respectively chargeable to the appropriations for incidental expenses, fire department, and police. In addition to the foregoing is the

class of city property known as the surrendered estates, for which there is also a special appropriation.

On account of these manifold duties, your committee is often obliged, at its regular monthly meetings, to examine and approve bills chargeable to seven different appropriations.

The departments which have claimed the especial attention of the committee are considered hereinafter.

Commons and Public Squares.

These have been in charge of individual members of the committee, according to the wards in which they are located, as during the year 1879; and while no effort has been spared which might tend to maintain the usual creditable appearance of this class of property, the expense of such maintenance has been materially lessened as compared with that of former years. All necessary work has been done towards rendering our commons and public squares attractive, with the twofold purpose in view, of adding to the general comeliness of our city, and of promoting the happiness and comfort of such of our citizens as during the temperate seasons of the year desire to resort thither for rest or recreation.

The amount appropriated was	$3,200 00
Additional amount transferred	500 00
Total	$3,700 00
Amount expended	3,640 10
Balance unexpended	$59 90

Of the amount expended, $1,000 and upwards were for bills incurred during the year 1879, including the water bill for fountains, which amounted to $670, and which was due July 1, 1879. The same bill for the year 1880 was paid during the current year. Deducting these bills of the year 1879, for water and other expenses, it appears that the actual cost of this department, during the financial year ending Nov. 30, 1880, was about $2,500, or upwards of $1,000 less than in any previous year. Included in this year's expenses are the following items, viz.: painting the various flagstaffs and the fences around the different commons; three hydrants placed upon the large

Common in Ward One; a horse lawn-mower, purchased early in the year, which has proved to be a great saving of expense to the city; and the well, also upon the Cambridge Common, which proved to be a great luxury to the public during the excessive drought of the last summer.

The public square at the junction of Main Street and Broadway has been made a part of the highway, and has been graded for public travel, thus meeting a want long recognized in this section of our city.

A small supply of ornamental trees has for some years been kept in a private lot of land near North Avenue, leased by the city. It is hoped that during the next year these trees will be removed to land of the city, and the lot now occupied be given up.

Under the operation of a recent amendment to the city ordinances, the care of the commons and public squares will in future be in the hands of the Committee on Roads and Bridges. By this change it is expected that a considerable saving of expense will be realized, as all the men employed upon the public work will be under the superintendent of streets. This change was recommended by the Committee on Public Property.

School-Houses and Public Buildings.

In these departments your committee has been called upon to make unusual and unexpected outlays.

The amount appropriated for

Care and repairs of school-houses was	$24,000 00
Additional amount transferred	2,950 00
Total	$26,950 00
Amount expended	26,711 63
Balance unexpended	$238 37

By comparison of the foregoing expenditure with that of the preceding year, it will be seen that there has been an increase in the cost of this department, amounting to the sum of $4,465.78, over the amount expended in 1879. This increase is attributable to the outlays rendered necessary by the annexation to this city of a part of the town of Belmont, the city

having been obliged to purchase two school-houses, one of which, being outside of the boundary of the newly annexed territory, was removed to a lot of land purchased by the city, in the annexed district. A lot of land was also purchased, situated on Charles Street in Ward Three, for the purpose of erecting a primary school-house thereon, as authorized by the City Council.

The amount of these extraordinary expenditures was as follows: —

School-houses, removing same and repairs, also land (annexed district)	$6,436 00
Land for school-house in Ward 3	1,500 00
Total	$7,936 00
The total expense for care and repairs of school-houses was,	$26,711 68
Deduct the above items	7,936 00
Actual ordinary expenses for the year	$18,775 68

By this showing it will be seen that the usual and ordinary expenses of this department during the past year were $3,708.64 less than in the year 1879, notwithstanding the fact that extensive repairs were made upon several of the school-houses during the summer vacation, and two new furnaces were put in.

Your committee has given considerable attention to the sanitary arrangements of the different school-houses, and believes that marked improvement has been made in this important matter.

The fire-proof vault in the basement of the City Hall, the construction of which was begun in 1879, has been completed, and the want, so long recognized, of a proper repository for the valuable records of the city, is now fully supplied. The amount authorized to be expended for this vault was $700; actual cost of the same, $298.46; balance unexpended, $401.54.

Alterations and repairs have been made in the city buildings in Wards One and Four, it being necessary to afford increased accommodations for the various occupants. In the city building on Brattle Square, certain changes were called for in order to adapt the room on the westerly end, to the use of the Hook and Ladder Truck No. 1, which has been transferred thither.

Other needful repairs have been made in the various engine-houses in other parts of the city.

Public Lands.

Your committee can report only a slight change in reference to the salable city lands. One small lot in Ward One, which was appraised in 1879, was found to have been given under conditions prescribing that it should forever remain as an open lot, and one small lot in Ward Three has been sold.

All the salable lands were offered at private sale by advertisement in the city advertising medium, but it was not deemed advisable to attempt to force a sale of any of the property by public auction. The committee has been ready at all times to consider any proposition looking to a sale in accordance with the advertisement.

Surrendered Estates.

It was adjudged expedient, at the beginning of the year, to make a change in the management of these estates, and Mr. J. W. Coveney was accordingly appointed as agent to take charge of the same and collect the rents. By an order of the City Council, this committee was authorized to sell any or all the estates, either by public auction or private sale, whenever the interest of the city could be subserved thereby. The entire property was therefore advertised at private sale by the agent, and subsequently at three different dates he held regularly appointed auction sales of the same.

The aggregate amount of sales is as follows: —

Amount disposed of at private sale	$9,439 10
Amount disposed of at three auction sales	29,285 00
Gross amount of sales	$38,724 10
Amount of cash received	$16,014 10
Balance remaining upon mortgages at six per cent	15,235 00
	$31,249 10
Amount of sales yet unsettled	7,475 00
	$38,724 10

The foregoing statement is made to include all cash received and transactions completed up to and including December, 1880. The amount of cash actually received up to the close of the financial year, Nov. 30, was $14,888.10; and those estates which were sold and not paid for prior to Nov. 30 are included in the schedule accompanying this report, and are designated by a star.* A comparison of this schedule with that appended to the report of the preceding year will show the different estates that have been sold by your committee.

The amount received for rents of surrendered estates in 1880, up to Nov. 30, was	$2,831 05
Amount expended for care and repair	1,469 27
Excess of receipts above expenses	$1,361 28
The amount appropriated for care and repair of surrendered estates was	$1,750 00
Amount expended	1,469 27
Balance unexpended	$280 73
Excess of receipts over expenses in 1880	$1,361 28
Excess of receipts over expenses in 1879	292 78
Gain in 1880	$1,068 50

The long-pending claim against the city for the Bancroft property was adjusted in January of this year, by the payment of the award as made by the courts; viz., $18,893.93, including interest. A bargain has already been closed for the sale of this property; and it will pass from the possession of the city before the close of the year.

But one unsettled claim for property surrendered on account of low-land filling now remains to be adjusted, viz., that of Benjamin F. Davies, in the Miller's River District, near Winter Street, in Ward Three. A deed of conveyance, purporting to describe this estate, is in the hands of the City Treasurer, but the city has never as yet taken possession of the same. The determination of questions in dispute relating to this property must be committed to the incoming City Council.

Your committee has only to add in further reference to the matter of the surrendered estates, that upon entering upon its duties an examination was made of all this property, and it

appeared that much of it must for a long time prove unproductive, the buildings requiring continual repairs, and the city thus necessarily at an increasing loss in retaining possession of it. It was deemed a wise measure to put the entire property upon the market, to be disposed of as far as possible by sale; and although it was soon discovered that we could not obtain the prices at which most of the estates were appraised in 1879, your committee believes that the sales have so far resulted beneficially to the city.

Janitors of School-houses and Public Buildings.

There is no especial need of other than a general allusion to these servants of the city. All the old employés, with the exception of one case of resignation, have been retained by your committee, and this circumstance may be taken as a guaranty that they have performed acceptable service.

THE FOLLOWING IS A SCHEDULE OF PROPERTY

owned by the city at the close of the year 1880, all of which is under the charge of this committee, except such as is specially noted.

Almshouse Building.

Foot of Tannery Street, Ward Five, with $14\frac{242}{1000}$ acres of land in Cambridge, $22\frac{5}{1000}$ acres of land in Somerville, and $\frac{1}{10}$ acre in Arlington. Total area, $36\frac{1}{3}$ acres. Also stone ledge located on almshouse land. (In charge of Board of Overseers of the Poor.)

Cemeteries.

Cambridge Cemetery. Foot of Coolidge Avenue, containing $40\frac{8129}{10000}$ acres of land. (In charge of Board of Commissioners of Cambridge Cemetery.) Included in their report.

Burial Ground. Garden Street, junction of North Avenue, containing 88,858 square feet of land.

Commons and Public Squares.

Cambridge Common. Garden Street, North Avenue, and Waterhouse Street. Area 370,785 square feet.

Public Square. Between Waterhouse Street and North Avenue. Area 13,180 $\frac{7}{10}$ square feet.

Arsenal Square. Garden and Chauncy Streets, and Concord Avenue. Area 3,189 square feet.

Public Square. Between Waterhouse Street and Garden Street. Contents 363 square feet.

Public Square. Between Holmes Place and Cambridge Street. Contents 20,956 square feet.

Public Square. North Avenue, corner of Kirkland Street, on south corner. Contents 23,074 square feet.

Public Square. North Avenue, corner of Kirkland Street, on north corner. Contents 33,357 square feet.

Broadway Park. Broadway, corner of Norfolk Street. Contents 107,181 square feet.

Fort Washington. Waverley Street. Contents 42,123 square feet.

Common. Junction of Pleasant and River Streets. Contents 1,569 square feet.

Hastings Square. Brookline, Chestnut, and Henry Streets. Area 29,999 square feet.

Dana Square. Lake, Magazine, Lawrence, and Niagara Streets. Area 33,531 square feet.

Winthrop Square. Brighton, Winthrop, and Mount Auburn Streets. Area 10,236 square feet.

Public Square. In front of Universalist church, junction of Main and Front Streets. Area 1,829 square feet.

Tudor Park. Between Fresh Pond Drive and Watertown Branch Railroad, containing 53,024 square feet.

City Lands.

Lot on Franklin, Auburn, and Sidney Streets, containing 79,920 square feet.

Lot on Auburn, Pilgrim, and Sidney Streets, containing 85,160 square feet, with house and shed thereon, owned by Water Works. (Leased to Cambridge Water Works.)

Lot on Sidney Street, east side, near Auburn Street, containing 26,172 square feet.

Lot on Cambridge, corner Portland Street, containing 111,697 square feet.

Lot, junction of Arrow and Main Streets, containing 872 square feet.

Lot, junction of Hampshire Street and Broadway, containing 614 square feet.

Lot on Charles Street, near Sixth, containing 10,000 square feet (purchased for the purpose of erecting a primary school-house thereon).

Gravel Pits.

Gravel Pit, on Concord Avenue, containing 471,148 square feet. (In charge of Committee on Roads and Bridges.)

Gravel Pit in Watertown, containing 109,464 $\frac{9}{10}$ square feet. (In charge of Committee on Roads and Bridges.)

City Buildings.

Ward One Building, Brattle Square, and land, 16,153 square feet.

Central Square Building, junction Western Avenue and Green Street, and 13,028 square feet of land.

City Hall, Main Street, corner Pleasant Street, and 10,181 square feet of land.

City Stables, Norfolk, Hampshire, and Tremont Streets, and 72,661 square feet of land. (In charge of Committee on Roads and Bridges.)

Police Station, Norfolk Street, on City Stable lot.

Engine-Houses.

House No. 1, Eliot Square, corner Mount Auburn Street, included with Ward One Building.

House No. 2, Main Street, near Winsor, and land, 3,449 square feet.

House No. 3, Gore and Fourth Streets, and land, 4,220 square feet.

House No. 4, North Avenue, near corner Russell Street, and land, 6,305 square feet.

House No. 5, Hampshire Street, corner Inman, and land, 6,000 square feet.

House, Old, junction Western Avenue and River Street, and land, 1,943½ square feet. (Leased as a carpenter's shop.)

House, Hook and Ladder No. 2, Cambridge, corner of Portland Street, land included in city lands.

School-Houses.

Allston, Boardman Street, 15,193 feet of land.

Agassiz, Oxford Street, corner Sacramento Street, 19,689 feet of land.

Boardman, Winsor Street, corner School Street, 10,018 feet of land.

Bridge, Pioneer Street, Lower Port, 4,646 feet of land.

Cushing, Cushing Street, nearly opposite Locust Street, 14,788 feet of land.

Dunster, Concord Avenue, near Sparks Street, and 10,000 feet of land.

Dana, Centre Street, and 14,317 feet of land.

Felton, Amory Street, corner Summer Street, and 15,090 feet of land.

Gore, Gore Street, between Third and Fourth Streets, and 9,900 feet of land.

Gannett, Columbia Street, between Lincoln and Cambridge Streets, and 8,800 $\frac{7}{10}$ feet of land; also, school-house lot adjoining, containing 18,870 feet.

Harvard (Grammar), Broadway, corner Inman Street, and 20,494 feet of land.

Harvard (Primary), Harvard Street, near Prospect Street, and 10,050 feet of land.

High School, Fayette Street, Antrim Street, and Broadway, and 37,828 feet of land.

Holmes, Hilliard Street, and 11,182 feet of land.

Holworthy, Holworthy Street, and 10,000 feet of land.

Mason, Front Street, corner Jennings Street, and 10,000 feet of land.

Otis, Otis Street, between Fifth and Sixth Streets, and 8,270½ feet of land.

Putnam, Otis Street, corner Fourth Street, and 10,000 feet of land.

Quincy, Mason Street, corner James Street, and 8,469 $\frac{3}{10}$ feet of land.

Reed, Reed Street, Ward Five, and 12,000 feet of land.

Riverside, Putnam Avenue, Ward One, and 11,198 feet of land.

Sargent, Broadway, corner Winsor Street, and 10,000 feet of land.

Shepard, North Avenue, near Russell Street, and 14,755 feet of land.

Thorndike, Thorndike Street, corner Sixth Street, and 10,027 feet of land.

Willard, Lake, Lawrence, and Niagara Streets, and 20,079 feet of land.

Webster, Upton Street, and 25,839 feet of land.

Wyman, Spruce Street, corner Groveland Street, and 14,346 $\frac{8}{10}$ feet of land.

Washington, Brattle Street, corner Farwell Place, and 14,951 $\frac{1}{2}$ feet of land.

Surrendered Estates.

These estates have been surrendered to the city under the provisions of the statutes relating to low-land filling.

This list gives by whom surrendered, and location of property.

CAMBRIDGE STREET DISTRICT.

* *Horigan, Jeremiah.* Warren Street. Two houses and 6,489 feet of land.

Langley, Samuel. Hunting and Harding Streets. 1,676 feet of land on Hunting Street.

Madden, D. & H. A. Willow and Harding Streets. House and 6,063 feet of land.

Nourse, Susan M. Porter and Jefferson Streets. Lot of land, 7,756 feet, Porter Street; lot of land, 11,202 feet, Porter and Jefferson Streets.

Rafferty, B. Cambridge and Jefferson Streets. Old building, and 24,934 feet of land.

* *Taunton Savings Bank.* Corner McCabe and Jefferson Streets. Block of three houses, and 3,375 feet of land, McCabe and Jefferson Streets.

MILLER'S RIVER DISTRICT.

Callahan, Mary. Rear of Winter Street. Lot of land, containing 2,750 square feet.

Dale, Thomas J. Rear of Winter Street. Three old buildings, and 5,220 feet of land.

Davies, Benjamin F. Rear of Gore Street. Lot of land containing 12,125 square feet. (Unadjusted.)

Moulton, H. & C. W. H. Rear of Gore Street. Lot of land containing 7,800 square feet.

Tibbetts, Israel. Bridge Street. Lot of land containing 3,765 feet.

COWPERTHWAITE STREET DISTRICT.

Crane, Ann, Heirs of. Grant Street and De Wolf Street. Lot of land containing 16,350 square feet.

Kneeland, Henry. Grant Street. Lot of land, 4,000 feet, on Grant Street.

Winthrop, William, Heirs of. Athens Street. Lot of land, west side, 6,750 feet; lot of land, east side, 20,360 feet.

SPARKS STREET DISTRICT.

* *Bancroft, George.* Estates on Mount Auburn and Willard Streets. Double house, 185 and 187 Mount Auburn Street, and 3,360 feet of land; double house, 197 and 199 Mount Auburn Street, and 2,870 feet of land; double house, 35 and 37 Willard Street, and 3,080 feet of land; double cottage, 4 and 6 Dinsmore Court, and 1,613 feet of land; double cottage, 8 and 10 Dinsmore Court, and 1,613 feet of land.

* *Bancroft, George.* Dinsmore Court. Double cottage, Nos. 12 and 14, and 1,613 feet of land; double cottage, Nos. 13 and 15, and 1,613 feet of land.

WASHINGTON STREET DISTRICT, SOUTH DOCK AND SOUTH CANAL.

Bent Heirs. Dock and Sixth Streets; east lot containing 5,224 feet; west lot containing 5,959 feet; rear lot containing 32,060 feet.

Hunt, Fanny E. Harvard Street, north side, easterly of the estate of Bridget Manning; lot containing 6,966 feet.

FRANKLIN STREET DISTRICT.

* *Ahern, John.* Rear Franklin, between Franklin and Green Streets. Two houses and 2,425½ feet of land.

Biggin, John. Franklin Street. Lot of land containing 3,004 square feet.

Chamberlain, N. & G. D. Green Street, near Vernon. Double house and about 4,000 feet of land.

Daily, Cornelius. Hancock Street, near Green. 3,467 feet of land.

Drinan, Maurice. Kinnaird Street. Lot of land, about 3,927 feet.

Eagan, Martin. Kinnaird Street. Double house and 4,527 feet of land.

Halloran, Mrs. Mary. 249 Franklin Street. Lot of land, 3,084 feet.

Johnston, Thomas A. Green Street. Lot of land, 4,860½ feet.

Kelley & McKinnon. Howard Street. Two lots of land, 7,200 feet.

Lonergan, Michael. Howard Street. Lot of land, 3,600 feet.

* *Mara, Thomas.* Hayes Court. Double house and 4,440 feet of land.

Murdock, Heirs of Hannah S. Land as per their plan. Western Avenue, new street from Western Avenue to Hews Street, lots 1 to 45 inclusive, containing 52,059 square feet; Franklin Street, lots Nos. 13, 14, 15, containing 11,500 square feet; Kinnaird Street, lots 16 to 21 inclusive, containing 22,240 square feet; Jay and Kinnaird Streets, lot 27 and about one half of lot 26, contents 2,810 square feet. Total area, 88,609 square feet.

Murdock, Walter H. and Mary L. Land as per their plan. Hews Street and Grigg Street. Lots 16 to 26 inclusive (about one half of latter lot); lots 29 to 45 inclusive, — in all 80,273 square feet.

* *Murphy, Daniel.* Hancock Street. Two houses and about 3,225 feet of land.

Read, J. Stacey. Franklin Street. Lot of land containing 21,128 feet; lot of land containing 3,833½ feet. Kinnaird Street, lot of land containing 17,646 feet. Howard and Kinnaird Streets, lot of land containg 8,174 feet. Total, 50,781½ feet.

Robbins, J. M. Western Avenue and Howard Street. Wooden block on Western Avenue, cor. Howard Street, and 3,000 feet of land. House on Howard Street, rear of Western Avenue, and 2,000 feet of land.

Thresher, J. M. Jay Street, westerly side, lots 28 to 37 inclusive, containing 38,313 square feet. Howard and Kinnaird Streets, easterly side, lots 38 to 46 inclusive, 32,454 square feet; westerly side Jay and southerly side Kinnaird Street, lots 58 to 63 inclusive, 20,383 square feet; two corner lots on westerly side of Howard Street, as per new plan, near Western Avenue, 29,935 square feet. Total, 121,086 square feet.

WHARVES AND LANDINGS.

Public Landing, foot of Bath Street, area unknown. *Public Landing*, south of Mount Auburn Street, area unknown. Each has a frontage of 30 feet on the river.

City Wharf, Main Street, opposite Harvard Street, 13,680 square feet. Also, 162,379 feet of flats opposite said wharf, not appraised.

WATER WORKS PROPERTY.

Old Engine-House Lot, foot of Lakeview Avenue, about 37,640 feet of land.

New Engine-House, opposite foot of Lexington Avenue, and 90,414 feet of land.

Fresh Pond, lands bordering on, area unknown.

Little Pond, lands bordering on, area unknown.

Reservoir, Reservoir Street, corner High Street, and 86,920 feet of land. All the Water Works property is in charge of the Cambridge Water Board, and no part thereof is included in any appraisals made by this committee.

Recapitulation of Areas.

Kind of property.	Square feet.	Acres.
Almshouse lands	1,583,289.4	36.347
Cambridge Cemetery	1,778,511.24	40.829
Burial Ground, Ward One	88,858	
Commons and Public Squares	744,406.4	
City Lands (salable)	315,210	
City Gravel Pit Land in Belmont	471,148	10.815
City Gravel Pit Land in Watertown	109,464.9	2.51
Occupied by City Buildings	112,023	
Occupied by School-Houses	400,801.8	
Occupied by Engine-Houses	21,917	
Surrendered estates, lands, —		
Cambridge Street District	61,495	
Miller's River District	31,660	
Sparks Street District	14,762	
Cowperthwaite Street District	47,460	
Washington Street District	50,209	
Franklin Street District	397,426	
Total in all the districts	603,012	
City Wharf Land	13,680	
City Flats, opposite City Wharf	162,379	
Lands occupied by Cambridge Water Works, exclusive of lands bordering on Fresh and Little Ponds	214,974	
Total	6,619,773.93	151.96

Schedule

Of salable city lands, included elsewhere in this report, with their appraisal, as made by the Committee on Public Property:

Lot on Franklin, Auburn, and Sydney Streets, 79,920 feet	$19,800 00
Lot on Auburn, Pilgrim, and Sydney Streets, 79,610 feet	17,032 00
Lot on Sydney Street, east side, near Auburn Street, 26,172 feet	3,925 80
Lot on Cambridge, corner Portland Street, 111,697 feet	39,093 95
Flats opposite City Wharf, Lower Port, 162,379 feet (not appraised).	
Total, as appraised	$79,851 75

Below is given a recent appraisal in detail of all the property mentioned in the foregoing list, except such as is in charge of the Cambridge Water Board, the aggregates being as follows: —

City Buildings, Land, and Furniture	$262,347 50
School-Houses, " "	585,956 50
Salable City Land	79,851 75
Surrendered Estates	147,576 32
Almshouse and Land	45,000 00
Wharf at Lower Port	7,000 00
Gravel Pit, in Cambridge	4,000 00
" in Watertown	13,587 30
Personal property used in connection with Public Squares, including trees on hand	600 00
Total	$1,145,919 37

Respectfully submitted,

EDWARD T. NICHOLS,
MICHAEL CORCORAN,
GEO. W. GOODNOW,
JAMES M. HILTON,
SAMUEL S. HAMILL,
Committee on Public Property.

ANNUAL REPORT

OF

THE BOARD OF HEALTH.

DECEMBER 31, 1880.

To the Honorable City Council:

THIS Board herewith transmits a report of its receipts and expenditures during the year which closed Nov. 30, 1880: —

Amount of appropriation	$2,000 00
Deduct amount transferred	20 00
Balance	$1,980 00

Expenditures.

Advertising	$23 65	
Analysis of water	15 00	
Car tickets	30 00	
Directory	2 50	
Disinfectants	29 96	
Expressage	1 10	
Legal expenses	15 00	
Printing blanks, etc.	8 20	
Salary of Dr. E. R. Cogswell, Health Officer, one month	83 33	
Salary of Dr. A. F. Holt, Health Officer, eleven months	916 67	
Salary of clerk	150 00	
Stationery and stamps	14 75	
		1,290 16
Balance unexpended		$689 84

By direction of the Board of Health,

JOHN McDUFFIE, *Clerk.*

To the City Council of the City of Cambridge:

In accordance with the provisions of the statute creating boards of health, we submit our Third Annual Report for the year ending Dec. 31, 1880.

The following table shows the character and number of nuisances abated: —

Vaults emptied	109
Vaults built	3
Vaults repaired	10
Cesspools emptied	5
Cesspools built	1
Stagnant water	8
Stagnant water in cellars	19
Dead animals buried	39
Defective house drainage	43
Filthy cow stables	2
Filthy yards	4
Filthy rooms	2
Manure	5
Offal	4
Swine	3
Filthy meat packing house	1
Sundries	8
Total	266

The number of complaints of full, overflowing, and filthy privy vaults has largely diminished from that of the previous year, although the number of vaults emptied by the contractor has nearly doubled. These yet constitute by far the principal item in the list of nuisances, and will continue to be such while the city suffers the maintenance of so many outside privies and cesspools. We are still strongly of the opinion, that if all private drains were allowed to be connected with the common sewers, independently of any intervening cesspool, such an arrangement would be a strong inducement to house-owners to make the necessary connections. This would not only dispense with the filthy vaults and cesspools, so obnoxious to the public health, but would also result in a saving to the owners of real estate, of the cost of emptying.

The order in relation to this matter, to which reference was made in our last report, has not yet been issued, but it is now

under consideration, and will without doubt be acted upon early in the coming year. We are more than ever convinced that some such regulation will be beneficial to all parties interested.

Two places of dwelling, one containing three families, and one containing one, after inspection by the full Board, and a hearing thereon, have been adjudged unfit for habitation and dangerous to the public health, and subsequently vacated by order. Six parties have been brought before the Police Court and fined for opening cesspools and privy vaults without permission from the Board.

A number of complaints have been made of the offensive odor proceeding from the grease-rendering establishments in our city, and three hearings have been had in relation to the matter, at one of which, a large number of persons residing in the neighborhood of one of these establishments appeared and gave testimony. This was somewhat contradictory, witnesses summoned by the complainants testifying that they were seriously annoyed by the odor, while those produced by the owners of the manufactory had suffered no inconvenience. We are well aware that the odor arising from works of this kind is often very offensive in the neighborhood, and that under certain conditions of the atmosphere it can be detected at a considerable distance. Such a business is of course objectionable in a thickly populated locality; yet, so far as this Board is aware, no case of sickness has been traced to this cause. When we consider that this business, and the kindred one of soap boiling, are among the principal industries of Cambridge, that they have existed for many years, that they employ a large number of our citizens, and have been a very considerable source of wealth, we feel that the time has not yet come to declare that such a business shall not be carried on in its present locations. The establishments will, however, be constantly under inspection, and will be subject to such regulations as may seem best, to make them as little of a nuisance as possible.

Early in the autumn, complaints were made by parties living near the southerly end of Spruce Street, that the sewer in that street was defective, and that on account of this, some of the wells in the vicinity had become contaminated by sewage.

The matter was investigated by the Board, with the assistance of the City Engineer, a number of holes were opened beside the sewer, and specimens of water taken therefrom and analyzed, and compared with samples from one of the wells referred to, and from other holes dug for the purpose in the vicinity, though at a distance from the sewer. No evidence was obtained that the sewer was faulty, or that the wells had suffered from such a cause. All of the waters so obtained were decidedly bad.

During the latter part of the year a careful inspection of the entire city was begun by the health officer, for the purpose of obtaining a sanitary history and knowledge of the present condition of each street. Whatever may be of interest, of the information thus gathered, will be recorded for future reference. This work will be completed early in the year, and will be of considerable value, as it will enable us to cause the frequent inspection of such places as may require the service, and at times when it would be impossible to go over the entire city.

The granting of licenses, hearing and investigating complaints, and adoption of orders for the abatement of nuisances, and the inspection of such places as were liable to become sources of danger to the public health, have constituted the remainder of the business of the Board.

In the month of February, 1880, Mr. James Wyman commenced working under a new contract for the removal of night soil, and since then this work has been done mostly by the odorless process, and usually in the daytime. As was expected, this plan has worked well, the vaults and cesspools being emptied with little if any of the stench that was unavoidable under the old plan. It has the additional advantage to parties ordering the work, of affording to them an opportunity of having it done under their own observation. Mr. Wyman was killed by accident in the latter part of September, and subsequently a new contract for the removal of night soil was made with Mr. R. M. Johnson, of Arlington. This contract was similar to that made with Mr. Wyman, except in a few minor details. The new contractor was recommended to the Board by the Board of Health of the City of Boston, where he has had thirteen years' experience in the business. It is

believed that he will do the work with satisfaction to all concerned.

The attention of the City Council is respectfully called to the condition of the two sewer outlets near the foot of Front Street. These sewers — viz., the Front Street and Sydney Street — terminate in a shallow basin. This basin was formerly washed out at each ebb and flow of the tide, but this action is now prevented by a tide-gate at the railroad crossing, the same having been placed there to prevent the flowing of the land in the vicinity. The basin is therefore now little else than a stagnant pool of sewage water, with quite a deposit of solid sewage matter upon its banks. Complaint was made at several times during the past summer, of the foul odor arising from this source, by parties residing in the neighborhood; and at the request of this Board the City Engineer caused the tide gates to be opened at short intervals, with the hope that in this way the water might be changed. Only a slight improvement was made in the condition of things by this method; and as the sewage matter must continue to be deposited upon the banks as heretofore, it is apparent that the means adopted will prove wholly inadequate as a remedy for the nuisance.

The filthy condition of Alewife Brook has greatly increased in the past year, so that it is now little else than an open sewer, the rank odor of which is distinguishable for a long distance from its banks.

Complaint has already been made of the noxious stench arising from the Charles River flats near the foot of Washington Street. This nuisance must of necessity increase, and in the near future, the condition of the river basin at the point named will be such as to compel action for the public relief.

The sanitary condition of that part of the Charles River basin near Craigie's Bridge requires no description at the hands of this Board, as it is familiar to all who have occasion to visit the locality. The dredging about the mouth of the Bridge Street sewer, for which the cities of Cambridge and Somerville have lately made an appropriation, can only afford a temporary and partial relief for the evil, if indeed any benefit may be thus obtained. We believe that the time has fully arrived for action by this city and adjoining municipalities, in the direction

of effective and permanent relief from these growing nuisances.

The hog-slaughtering establishment of Niles Brothers, upon Concord Avenue, by the recent annexation to our city of a part of the town of Belmont, is now within the city limits. During the first half of the year, the proprietors seemed to comply with the requirements of the State Board of Health, with reasonable faithfulness. Recently, however, there have been indications that the careful attention to cleanliness so desirable in such places has not been observed, and a large amount of solid refuse matter from the establishment has been allowed to discharge into Alewife Brook. An order in relation to this subject has already been issued to Messrs. Niles Brothers by this Board.

The Board has procured analyses of the waters of fourteen wells, located in different parts of the city, and also of a sample taken from Spruce Street sewer, the results being tabulated below. These, like the analyses of the previous year, prove that the well water of the city is greatly inferior to that of Fresh Pond, and less desirable for drinking or culinary uses.

In 100,000 Parts.

Number.	Locality.	Ward.	Inorganic Matter.	Organic Matter.	Total Residue.	Ammonia Free.	Ammonia Albuminoid.	Total Ammonia.	Chlorine.	Remarks.
1	Cambridge Common	1	8.20	1.50	9.70	.003	.006	.009	.74	Sulphate of lime present.
2	F. L. Chapman's Factory	1	24.00	8.00	32.00	.0045	.0050	.0095	1.39	Sulphate of lime present. Carbonate of lime, strong.
3	Hole in marsh, near Spruce St..	5	82.5	11.0	93.5	.0248	.0186	.0434	14.15	Sulphate of lime present. Nitrous traces.
4	Hole opp. Fitzgerald's, Spruce St.	5	77.0	11.5	88.5	.0105	.0992	.1097	31.89	Sulphate of lime present. Nitrous traces.
5	Kohley well, Spruce St	5	46 8	8.7	55.5	.0093	.0527	.0620	8.28	Sulphate of lime present. Nitrous traces.
6	14 Avon Street.....	5	1.00	1 50	2.50	.010	.009	.019	Traces	Sulphate of lime, traces.
7	139 Broadway.....	2	11.7	2.6	14.3	.0045	.0150	.0195	1.57	Sulphate of lime present.
8	Arlington water supply	..	3.00	3 50	6.50	.006	.027	.033	Present	Sulphate of lime present.
9	11 Shepard St.....	1	9.50	4.50	14 00	.0030	.0120	.0150	Present	Sulphate of lime present.
10	25 Sixth St.	3	30.50	5.00	35.50	.0060	.0075	.0135	4.89	Sulphate and carbonate of lime, strong. Nitrous traces.
11	77 Thorndike St.....	3	....	....	98.	.0045	.0100	.0145	7.34	Sulphate and carbonate of lime, strong. Nitrous traces.
12	78 Spruce St.....	5	....	....	80.5	.0090	.0140	.0230	6.28	Sulphate of lime and nitrates, strong.
13	23 Spruce St.....	5	....	....	36.2	.0030	.0150	.0180	3.36	Sulphate of lime and nitrates, strong.
14	15 Fifth St.....	3	....	....	87 50	.0060	.0080	.0140	11.06	Sulphate and Carb. of lime, strong. Nitrates, traces.
15	From Spruce St. sewer.....	5	24.80	5.20	30.00	32.00	12.80	44.80	4.84	Sulphate of lime present.

We are again enabled to give a tabulated report of the number of cases of scarlet fever, diphtheria, and typhoid fever that have occurred during the year.

The thanks of the Board are due to the physicians of our city for the prompt and hearty manner in which they have co-operated with us in this matter.

The number of cases of typhoid fever was —

In 1879	50
In 1880	49
Decrease	1

Number of cases of scarlet fever —

In 1879	167
In 1880	92
Decrease	75

Number of cases of diphtheria —

In 1879	261
In 1880	190
Decrease	71

The number of deaths from these diseases has diminished in even greater proportion than appears by the foregoing statement.

A table is also appended hereto, showing the total number of deaths and their causes, as they have occurred in each month.

The whole number of deaths in 1880 was 1,003, being an increase of 58 over that reported for the previous year. This increase may be accounted for by the annexation in May, 1880, of a large district from the adjoining town of Belmont, and the otherwise increased population of the city.

D. H. THURSTON,
GEORGE F. PIPER,
H. P. WALCOTT,
Board of Health.

APPENDIX.

Causes of Death in 1880.

CLASSIFIED ACCORDING TO THE NOSOLOGY ADOPTED IN THE REGISTRATION REPORTS OF MASSACHUSETTS.

DISEASE.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Scarlet Fever	....	....	....	....	1	....	....	1	....	1	1	1	5
Diphtheria	8	3	5	....	2	2	3	2	....	6	....	7	38
Measles	....	....	....	....	....	....	1	....	....	....	2	1	4
Varicella	....	....	....	....	1	....	....	....	....	1	....	....	2
Croup	3	....	1	....	3	1	1	....	....	1	1	2	13
Whooping Cough	2	1	....	....	....	....	1	....	1	....	2	2	9
Typhoid Fever	....	1	....	....	....	....	1	....	3	1	2	....	8
Erysipelas	....	1	....	....	....	....	1	....	....	2	....	3	7
Metria	....	....	....	....	2	....	....	....	....	....	....	....	2
Dysentery	....	1	....	....	....	....	....	5	1	1	1	....	9
Diarrhœa	....	....	....	....	1	....	6	2	2	....	....	....	11
Cholera Infantum	....	....	....	....	....	5	30	22	8	3	....	....	68
Cholera Morbus	....	....	....	....	....	2	....	3	1	....	....	....	6
Rheumatism	....	....	....	....	....	1	....	....	....	....	....	....	1
Cerebro-spinal Meningitis	....	....	....	....	....	1	1	....	1	....	....	....	3
Syphilis	....	2	....	....	....	....	....	....	....	1	....	....	3
Septicæmia	....	....	....	1	....	....	1	....	1	1	....	....	4
Privation	....	....	....	....	....	....	1	....	....	....	....	....	1
Dropsy and Anæmia	1	1	....	2	....	....	....	....	....	....	1	....	5
Cancer	1	1	....	2	7	....	3	8	5	4	1	1	33
Mortification	....	....	2	....	2	1	....	....	....	....	....	....	5
Purpurea Hemorrhagica	....	....	....	....	1	....	....	....	....	....	....	....	1
Alcoholism	1	1	....	....	....	....	2	....	....	....	1	....	5
Phthisis	12	11	13	16	14	19	12	9	18	16	11	10	161
Hydrocephalus	1	2	....	....	....	1	2	5	3	1	1	3	19
Sunstroke	....	....	....	....	....	1	....	....	....	....	....	....	1
Meningitis	5	5	3	9	....	5	1	5	4	4	1	1	43
Apoplexy	1	1	1	....	2	1	....	....	1	2	1	4	14
Paralysis	3	2	3	2	2	1	2	2	....	2	....	1	20
Insanity	1	....	1	....	....	....	....	....	....	....	1	....	3
Convulsions	2	3	2	....	4	....	....	3	....	3	4	1	22
Brain Diseases	1	3	2	1	....	1	4	2	....	....	2	....	16
Spinal Disease	....	....	....	1	....	1	....	....	....	....	....	....	2
Pericarditis	....	....	....	1	....	....	1	....	....	....	....	1	3
Aneurism	....	....	....	1	....	....	....	....	....	....	....	....	1
Heart Diseases	2	5	9	3	2	5	2	3	2	2	1	4	40
Laryngitis	1	2	....	....	....	....	....	....	....	....	....	....	3
Bronchitis	3	3	3	2	4	....	....	....	....	1	4	3	23
Pleurisy	....	....	....	....	1	....	....	....	1	....	....	....	2
Pneumonia	10	10	7	7	5	4	4	3	1	4	10	15	80
Asthma	1	....	....	....	....	....	....	....	....	....	....	....	1
Lung Diseases	....	3	4	3	2	1	1	....	4	3	1	3	25
Gastritis	....	....	....	1	....	....	1	....	....	....	....	....	2
Enteritis	....	....	....	1	2	1	6	2	1	1	2	1	17
Peritonitis	2	....	1	1	....	1	2	....	1	5	....	....	13
Ulceration of Intestines	....	....	....	....	....	....	....	1	....	....	1	....	2
Hernia	....	....	....	....	....	....	....	....	....	....	1	1	2
Ilens	....	....	....	....	....	....	....	....	....	....	....	....	0
Occlusion of Intestines	....	....	....	....	1	....	....	....	....	....	....	....	1
Fistula	....	....	....	....	....	....	....	....	....	....	....	....	0

Causes of Death in 1880—Continued.

Diseases.	January.	February.	March.	April.	May	June.	July.	August.	September.	October.	November.	December.	Total.
Stomach Disease	....	1	1	....	....	1	....	....	....	....	....	1	4
Jaundice	....	....	....	....	....	....	....	....	....	....	....	1	1
Liver Diseases	1	....	2	1	....	1	1	2	....	1	....	2	11
Spleen Diseases	....	....	....	....	....	....	....	....	....	....	....	....	0
Nephritis	....	....	....	....	....	2	2	....	1	2	2	1	10
Bright's Disease	3	2	1	1	1	....	....	....	1	1	....	2	12
Diabetes	....	....	....	....	1	....	....	....	....	....	....	....	1
Cystitis	1	....	....	....	....	1	1	....	1	....	....	....	4
Kidney Diseases	....	....	....	....	....	....	....	....	....	....	1	....	1
Disease of Uterus	1	....	....	....	....	....	....	....	1	....	....	....	2
Pott's Disease	....	....	....	....	....	....	....	....	....	....	....	1	1
Tumor of Neck	....	....	....	....	....	1	....	....	....	....	....	....	1
Ulcer of Leg	....	....	....	....	....	1	....	....	....	....	....	....	1
Stillborn	6	2	6	1	4	2	7	5	....	5	5	7	50
Premature Birth and Infantile Debility	....	1	4	2	2	3	5	3	3	7	8	2	40
Cyanosis	....	....	....	....	....	....	1	1	....	....	1	....	3
Spina Bifida	....	1	1	....	....	....	....	....	....	....	....	....	2
Other Malformations	....	....	....	....	....	....	....	....	1	....	....	....	1
Teething	....	1	....	....	....	....	....	....	....	....	....	....	1
Umbilical Hemorrhage	....	....	....	....	....	....	....	....	....	....	1	2	3
Neglect	....	....	....	....	....	....	1	....	....	....	....	....	1
Childbirth	....	....	....	....	....	....	2	....	....	....	1	1	4
Old Age	1	4	2	6	1	4	....	2	2	1	....	2	25
Atrophy and Debility	1	3	....	1	1	....	....	2	4	....	1	2	15
Fractures and Contusions	....	....	1	2	....	1	....	....	1	....	....	2	7
Burns and Scalds	1	....	1	....	....	....	....	....	....	....	....	....	2
Drowning	....	....	....	....	....	....	....	....	....	....	....	1	1
Other Violence	....	2	....	1	2	....	2	2	2	1	....	....	12
Poison	....	....	....	....	1	....	....	....	....	....	....	....	1
Suicide	....	....	....	....	1	....	....	....	....	....	....	....	1
Unknown	1	....	1	3	5	5	3	1	2	2	1	2	26
Totals	77	79	77	72	76	79	115	96	78	86	74	94	1,003

Cases of Scarlet Fever, Diphtheria, and Typhoid Fever reported to the Board of Health for the Year 1880.

Name of Disease.	January.	Febr uary.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Scarlet Fever	3	5	7	4	2	0	3	4	6	17	21	20	92
Diphtheria	31	21	18	12	13	9	8	8	3	29	19	19	190
Typhoid Fever	6	3	0	3	0	1	2	4	9	8	11	2	49

REPORT

OF THE

CEMETERY COMMISSIONERS.

To the Honorable City Council, City of Cambridge:

The Commissioners of the Cambridge Cemetery, in presenting their annual report for the year ending Nov. 30, 1880, desire to call your attention to the continued improvements in this "city of the dead," which now numbers 11,376, or nearly the population of Cambridge in 1845.

Our citizens each year are recognizing the attractiveness of the spot as a place of sepulture, by purchasing family lots and ornamenting those already purchased.

The large expense involved in securing a desirable lot in either of the two leading cemeteries in the neighborhood of Boston has brought Cambridge Cemetery more to the public attention.

The location of the Cemetery on high land, with Charles River skirting its borders on the south, and separated from Mount Auburn by only the width of a street; while its care is ever to remain under the city, — these would seem to be sufficient reasons why Cambridge people should find this an unusually attractive spot for their "long rest."

During the year a satisfactory arrangement has been made with Jos. G. Coolidge, Esq., by which his claim for damages, arising from filling up a ditch bordering his and the Cemetery land, has been adjusted; the Commissioners, under authority of the City Council, having purchased a strip of land of him, amounting to 4,623 feet, at a cost of $369.84.

The Commissioners have in course of preparation plans of all the lots in which no interments have been made, as well as all the lots now laid out but unsold. This will be put in book form, and will contain diagrams showing the location of each grave; and to it will be added new lots as fast as prepared. This is similar to the Mount Auburn plan, but simpler.

The fence, or lack of a substantial fence, about the Cemetery seems to be a matter demanding consideration. Without wishing to incur any unnecessary expense, we think something toward it might be done each year, until the grounds are properly protected.

Owing to the fact that the water pipes do not extend to the remote portions of the grounds, the grass and flowers, except near the entrance, cannot be kept properly watered in a dry season, such as the last has been. But we think the grounds will compare favorably with other cemeteries having greater facilities in this respect.

The number of interments during the year is 478, being 36 less than the year previous.

The number of lots prepared during the year	74
Lots prepared and now for sale	49
Estimated value of prepared lots	$11,459 75

There have been received and paid into the city treasury for the perpetual care of lots, $450; which, with amounts paid previously, makes the total amount of this fund $2,400.

Receipts for the Year 1880.

Cash received for burial lots	$4,582 37
" " care of lots	2,531 14
" " burial fees	1,591 50
" " foundations	387 67
" " brick graves	159 00
" " hay	83 65
" " wood	7 06
" " myrtle	114 00
" " top-dressing lots	99 75
" " granite posts	546 00
" " interest on the fund for the perpetual care of the lots	117 00
Total receipts	$10,219 14

Expenditures for the Year 1880.

Superintendent's salary	$1,300 00
Sundry workmen	6,228 44
Loam, sods, and manure	1,140 22
Plants, water, lumber, and cement	444 49
Marble tablets for soldiers' lot	161 00
Ashes and trees	280 00
Hardware and wire fencing	118 26
Myrtle, granite posts, grave covers, and markers	336 54
Lawn mower, repairs, bricks, and grass seed	53 95
Rent of post-office box, expressing, and stationery	24 49
Printing, blacksmithing, and ledge stone	70 00
Sundry other expenses	99 42
Total expenditures	$10,256 81
Amount of appropriation	$10,000 00
The amount required for the ensuing year is	$11,000 00
The receipts are estimated at	10,000 00

All of which is respectfully submitted.

JAS. M. W. HALL,
GEO. T. GALE,
JOHN M. TYLER,
GEO. S. SAUNDERS,
WILLIAM PAGE,

Commissioners of the Cambridge Cemetery.

REPORT

OF THE

OVERSEERS OF THE POOR.

The Board of Overseers of the Poor of the City of Cambridge respectfully submits its annual report.

In the statement presented it appears that the net cost to the city of the care and maintenance of the poor, for the year just closed, was $21,177.78, which is $4,178.41 less than it was the previous year. This does not include the expenses of the House Offal Department.

The appended tables show the amount expended and received in each department, as well as the actual cost to the city, which has been as follows: —

Expenditures for outside aid	$15,136 50
Receipts for outside aid	5,574 79
Total cost	$9,562 71
Expenditures for almshouse	$13,597 26
Receipts for almshouse	756 58
Total cost	$12,840 68
Expenditures for farm and ledge	$1,320 53
Receipts for farm and ledge	2,546 14
Excess of receipts	$1,225 61
The aggregate expenditures for the above departments have been	$30,054 29
The aggregate receipts for the same have been	8,876 51
Total cost to the city for support and maintenance of the poor	$21,177 78
Expenditures for house offal	$7,068 34
Receipts for house offal	4,847 64
Total cost	$2,220 70

Recapitulation.

The appropriation, with estimated revenue, made by the City Council for the pauper department, almshouse, and collection of house offal, for the financial year commencing Dec. 1, 1879, was $42,000.

There have been expended	$37,122 63
The receipts have been	13,724 15
Leaving a total cost to the city of	$23,398 48

This exhibit is gratifying, as showing the reduction of pauperism, as well as the financial benefit to our city.

It will be seen by the following tabulated statements that 426 histories of applicants for aid have been taken within the past year, embracing 958 persons, 260 of whom are settled in Cambridge, 187 in other cities and towns, and 511 are State paupers. This number, added to those already on file, constitutes a total of 2,240 histories, comprising 6,512 persons.

The number of paupers supported by the city during the past year is as follows: —

City Almshouse	251
State Almshouse	2
State Industrial School	3
State Reform School	5
Middlesex House of Correction	13
State Lunatic Hospitals	39
	313

Almshouse.

Total number of inmates during the year	251
Total number present, Nov. 30, 1880	116
Average monthly number	135

The almshouse is in a good condition, and the care and attention bestowed upon the inmates is commended.

Since our last report was submitted the former physician to the institution, Dr. J. R. Morse, has died, after a faithful service of fifteen years. Dec. 31, 1879, the City Council adopted an ordinance, placing the sick poor under the care of the city physician, who was authorized by the ordinance to appoint an assistant to perform that duty. Dr. O. C. Turner was selected

by the city physician as his assistant, and has performed his duties to the satisfaction of this Board. His record shows that he has visited the almshouse 135 times during the ten months ending Nov. 30, 1880. Within this time 46 patients have been under treatment in the hospital wards: 26 females and 20 males. Ten deaths have occurred at the institution during this period, which are included in the list of deaths given below. The health of the children at the almshouse has been remarkably good, and no epidemics or cases of serious disease have occurred among them.

He has also made 2,187 visits to 326 different patients outside of the almshouse. He has performed 133 vaccinations, made 21 examinations of persons alleged to be insane, and attended 19 cases of obstetrics. The whole number of deaths occurring in this practice is 38, from the following causes: —

Consumption	15
Pneumonia	4
Cancer	3
Diarrhœal diseases of children	5
Heart disease	3
Chronic ulcer	1
Whooping cough	1
Paralysis	1
Convulsions (infantile)	1
Congenital syphilis	1
Pyothorax	1
Pneumonia, sequel to measles	1
Still-born	1
	38

The assistant states, in his report to the city physician, that "in the above list it will be seen that consumption is credited with even more than the usual large percentage, making, together with heart disease and cancer, more than half of the whole number. The large list of deaths from these causes may be explained by the fact that poor persons afflicted with these chronic diseases, having exhausted their means, and being unable longer to provide for themselves, have been obliged to call upon the city for aid during the last of their illness. Indeed, many of these have remained upon the books but a few days."

Rev. F. W. Holland, as chaplain, continues his zealous interest in the welfare of the inmates.

The city school, taught by Miss Harriet A. Butler, keeps up its former reputation for excellence of instruction and discipline.

Two thousand five hundred and forty-six dollars and fourteen cents were received from the sale of farm products and stone from the ledge. The work performed on the farm and ledge has been done almost entirely by the inmates of the institution. A fuller statement will be found in the warden's report.

A schedule of personal property of the almshouse, as prepared in detail by the warden under the direction of the House Committee, is in accordance with the amounts submitted: —

Warden's family department	$677 56
Room No. 1	89 20
Room No. 2	86 00
Room No. 3	114 00
Room No. 4	47 00
Room No. 5	93 75
Room No. 6	47 50
Room No. 7	37 50
Room No. 8	52 00
Room No. 9	74 00
Parlor	204 00
Office	241 20
Paupers' department	4,329 26
Property outside of house	5,395 15
Store-room	1,223 25
Total estimated value	$12,711 37

House Offal Department.

The labor of collecting the house offal naturally increases with the growth of the city.

Additional means and larger expenditures for carrying on the work were found necessary during the past year, and further provision will be required during the coming season to comply satisfactorily with the demands of the important sanitary order under which this Board is required to act.

The appropriation for the collection of house offal, with the estimated receipts from sales, was $6,000; the expenditures were $7,068.34; the receipts were $4,847.64: leaving a total expense for collection of $2,220.70.

The utility of the central office in carrying out the work of systematic registration is year by year more clearly apparent.

For much of this success the Board of Overseers recognizes its indebtedness to the faithful and intelligent labors of the Secretary and Visitor.

JAMES M. W. HALL,
GEO. D. CHAMBERLAIN,
EZRA PARMENTER,
CHAS. E. VAUGHAN,
SUMNER ALBEE,
J. C. WELLINGTON,
} *Overseers of the Poor.*

Table of Expenditures.

BILLS APPROVED BY THE OVERSEERS OF POOR, DECEMBER, 1879, TO DECEMBER, 1880.

MONTHS.	Outside Aid.	Almshouse.	Farm and Ledge.	House Offal.	Total.
1879.					
December.....	$1,186 82	$1,008 82	$67 50	$521 53	$2,784 67
1880.					
January	2,359 91	1,447 43	77 95	420 95	4,306 24
February	878 27	609 24	79 87	425 40	1,992 78
March	854 43	1,161 12	118 95	511 76	2,646 26
April	2,208 83	1,616 67	139 32	655 39	4,620 21
May	856 70	876 12	145 26	683 00	2,561 08
June.....	612 03	1,103 39	134 45	719 36	2,569 23
July	2,253 44	1,000 40	148 33	703 05	4,105 22
August	751 82	935 42	133 55	470 15	2,290 94
September	508 84	1,146 27	69 50	509 07	2,233 68
October	2,045 87	1,131 30	119 25	455 15	3,751 57
November	619 54	1,561 08	86 60	993 53	3,260 75
Total	$15,136 50	$13,597 26	$1,320 53	$7,068 34	$37,122 63

Table of Receipts.

FROM DEC. 1, 1879, TO DEC. 1, 1880.

MONTHLY ACCOUNTS.	Outside Aid.	Almshouse.	Farm and Ledge.	House Offal.	Total.
1879.					
December.....	$231 00	$40 97	$142 72	$276 87	$691 56
1880.					
January	241 66	52 00	162 49	859 79	1,315 94
February	427 60	54 73	61 25	153 99	697 57
March	1,052 44	107 17	51 19	239 78	1,450 58
April	371 86	29 25	37 62	750 94	1,189 67
May	122 28	35 55	202 93	160 47	521 23
June.....	293 74	84 50	186 64	187 09	751 97
July	565 80	31 25	744 50	719 28	2,060 83
August	910 95	128 50	119 88	152 08	1,311 41
September	495 93	50 22	270 90	164 84	981 89
October	60 21	55 75	217 10	981 09	1,314 15
November	800 32	86 69	348 92	201 42	1,437 35
Total	$5,573 79	$756 58	$2,546 14	$4,847 64	$13,724 15

Outside Aid Department, Dec. 1, 1879, to Dec. 1, 1880.

Monthly Accounts.	Salaries, Books, and Stationery.	Postage and Printing.	Medical Attendance and Medicine.	Burials.	Fuel.	Groceries.	Boots, Shoes, and Clothing.	Transportation and Travel.	Outside Support.	State Criminal Paupers.	State Insane Hospitals.	House of Correction.	Miscellaneous.	Total.
1879.														
December....	$260 28	$4 50	$3 00	$70 00	$185 86	$163 37	.....	$22 85	$95 41	.....	$351 90	.....	$29 65	$1,186 82
1880.														
January	230 08	4 00	256 53	.....	132 36	172 52	.....	27 66	256 59	$68 00	1,200 42	.....	11 75	2,359 91
February	239 28	7 50	144 58	.....	123 42	189 19	.....	20 00	77 88	.....	.....	$68 57	7 85	878 27
March	232 90	54 83	18 81	.....	116 46	221 86	$14 00	31 60	155 17	.....	.....	.....	8 80	854 43
April	222 42	3 50	28 38	.....	25 83	113 86	.....	28 07	35, 39	61 00	1,665 55	.....	24 83	2,208 83
May	230 50	3 00	25 56	90 00	.....	118 76	10 73	39 22	334 43	.....	.....	.....	4 50	856 70
June.....	241 77	3 00	38 73	.....	24 48	208 34	.....	8 46	82 85	.....	.....	.....	4 40	612 03
July	218 58	11 50	5 00	.....	4 80	162 75	.....	25 00	315 89	67 00	1,442 12	.....	80	2,253 44
August	261 53	5 00	62 58	104 00	13 12	154 73	.....	6 61	98 40	.....	.....	.....	45 85	751 82
September ...	228 92	3 00	24 40	.....	13 50	142 81	7 10	33 15	54 21	.....	.....	.....	1 75	508 84
October.....	243 67	4 00	19 11	.....	21 26	149 56	.....	6 82	69 25	59 00	1,459 30	.....	13 90	2,045 87
November ...	259 07	5 00	54 28	.....	76 48	135 06	5 60	28 75	24 23	.....	.....	.....	31 07	619 54
Total	$2,869 00	$108 83	$680 96	$264 00	$737 57	$1,932 81	$37 43	$278 19	$1,599 70	$255 00	$6,119 29	$68 57	$185 15	$15,136 50

Outside Aid Department.

Monthly Accounts.	Amount Expended.	Amount Received.	Receipts above Expenditures	Expenditures above Receipts.
1879.				
December	$1,186 82	$231 00	.....	$955 82
1880.				
January	2,359 91	241 66	.....	2,118 25
February	878 27	427 60	.....	450 67
March	854 43	1,052 44	$198 01	
April	2,208 83	371 86	.....	1,836 97
May	856 70	122 28	.....	734 42
June	612 03	293 74	.....	318 29
July	2,253 44	565 80	.....	1,687 64
August	751 82	910 95	159 13	
September	508 84	495 93	.....	12 91
October	2,045 87	60 21	.....	1,985 66
November	619 54	800 32	180 78	
Total	$15,136 50	$5,573 79	$537 92	$10,100 63

Amount expended	$15,136 50
Amount received	5,573 79
Net cost	$9,562 71

Almshouse Department.

Monthly Accounts.	Groceries and Provisions.	Dry Goods.	Clothing.	Fuel.	Gas.	Water.	Hardware, Tools, etc.	Horse-shoeing and Carriage-work.	Medicines.	Salaries and Wages.	Repairs.	Stationery and Printing.	Lumber, etc.	Household Wares.	Ice.	Cow.	Harness.	Miscellaneous.	Total.
1879.																			
Dec..	$266 16	$15 93	$12 75	$206 92	.....	.....	$35 44	.....	.....	$404 00	$39 86	$5 00	$2 56	.....	$16 20	....	.....	$4 00	$1,008 82
1880.																			
Jan...	524 47	.....	17 25	81 04	$156 09	$230 31	2 50	$12 40	.....	379 00	.....	18 75	.....	$22 62	.....	....	.....	3 00	1,447 43
Feb...	191 35	165 91	1 30	6 00	.....	.....	.....	.....	$68 16	170 67	1 10	25	.....	1 00	.....	....	.....	3 50	609 24
March	442 47	25 68	96 83	148 38	.....	.....	38 59	7 00	8 45	187 33	106 99	.....	45 23	42 27	.....	$9 00	.....	2 90	1,161 12
April,	744 99	75 89	15 00	116 11	68 37	87 24	.....	.....	25 27	408 00	63 05	.....	1 00	.....	.....	....	.....	11 75	1,616 67
May..	530 12	105 71	4 00	.....	.....	.....	.....	50	.....	138 00	40 05	.....	.....	.....	.....	....	$50 00	7 74	876 12
June.	457 31	74 97	8 50	105 40	....	.....	.....	5 50	.....	344 66	99 30	.....	.....	.....	.....	....	.....	7 75	1,103 39
July..	631 97	.....	.....	.....	29 15	15 00	.....	.....	24 38	241 33	.....	.....	58 57	.....	.....	....	.....	.....	1,000 40
Aug..	404 64	116 75	.....	.....	.....	.....	61 30	7 13	.....	241 33	58 95	11 46	3 25	21 41	.....	....	.....	9 20	935 42
Sept..	547 75	.....	77 73	.....	.....	.....	.....	.....	.....	341 33	114 46	.....	.....	47 25	.....	....	.....	17 75	1,146 27
Oct...	267 90	6 75	32 50	306 03	30 21	184 65	.....	.....	27 18	241 33	.....	.....	24 75	.....	.....	....	.....	10 00	1,131 30
Nov..	497 79	97 41	232 25	369 42	.....	.....	21 46	4 50	3 60	241 33	.....	.....	4 80	19 62	45 90	....	.....	23 00	1,561 08
Total.	$5,506 92	$685 00	$498 11	$1,339 30	$283 82	$517 20	$159 29	$37 03	$157 04	$3,338 31	$523 76	$35 46	$140 16	$154 17	$62 10	$9 00	$50 00	$100 59	$13,597 26

City Almshouse Department.

Monthly Accounts.	Number of Paupers.	Total Expenditures.	Total Receipts.	Expenditures above Receipts.
1879.				
December.....	137	$1,008 82	$40 97	$967 85
1880.				
January	137	1,447 43	52 00	1,395 43
February	134	609 24	54 73	554 51
March	143	1,161 12	107 17	1,053 95
April	144	1,616 67	29 25	1,587 42
May	143	876 12	35 55	840 57
June	131	1,103 39	84 50	1,018 89
July	134	1,000 40	31 25	969 15
August	132	935 42	128 50	806 92
September	126	1,146 27	50 22	1,096 05
October	131	1,131 30	55 75	1,075 55
November	126	1,561 08	86 69	1,474 39
Total	.....	$13,597 26	$756 58	$12,840 68

Amount expended	$13,597 26
Amount received.....	756 58
Net cost	$12,840 68

Average number of paupers.....135

Farm and Ledge Department.

Monthly Accounts.	Powder.	Wages on Ledge.	Wages on Farm.	Miscellaneous.	Garden Seeds.	Total.
1879.						
December	.....	$37 50	$30 00	.....	.....	$67 50
1880.						
January	$10 95	28 75	30 00	$8 25	.....	77 95
February	11 75	38 12	30 00	.....	.....	79 87
March	10 95	78 00	30 00	.....	.....	118 95
April	12 95	94 50	30 00	1 87	.....	139 32
May	10 95	91 31	40 00	3 00	.....	145 26
June	10 95	82 50	35 00	6 00	.....	134 45
July	.....	87 62	35 00	.....	$25 71	148 33
August	12 30	81 25	35 00	5 00	.....	133 55
September	.....	34 50	35 00	.....	.....	69 50
October	23 25	33 75	35 00	27 25	.....	119 25
November	11 85	39 75	35 00	.....	.....	86 60
Total	$115 90	$727 55	$400 00	$51 37	$25 71	$1,320 53

Farm and Ledge Department.

Monthly Accounts.	Amount Expended.	Amount Received.	Receipts above Expenditures.	Expenditures above Receipts.
1879.				
December.....	$67 50	$142 72	$75 22	.....
1880.				
January	77 95	162 49	84 54	.....
February	79 87	61 25	.....	$18 62
March	118 95	51 19	.....	67 76
April	139 32	37 62	.....	101 70
May	145 26	202 93	57 67	.....
June.....	134 45	186 64	52 19	.....
July	148 33	744 50	596 17	.....
August	133 55	119 88	.....	13 67
September.....	69 50	270 90	201 40	.....
October.....	119 25	217 10	97 85	.....
November	86 60	348 92	262 32	.....
Total	$1,320 53	$2,546 14	$1,427 36	$201 75

Amount expended	$1,320 53
Amount received	2,546 14
Excess of receipts	$1,225 61

House Offal Department.

Monthly Accounts.	Wages.	Veterinary Services and Printing.	Grain and Straw.	Blacksmith.	Hardware.	Disinfectant, Repairs, and Paint.	Horse.	Total.
1879.								
Deeember.....	$377 50	$4 00	$86 29	$45 78	$7 96	.....	.....	$521 53
1880.								
January	377 50	.....	.....	.....	.....	$43 45	.....	420 95
February	377 50	2 00	45 90	.....	.....	.....	.....	425 40
Mareh	377 50	.....	62 96	71 30	.....	.....	.....	511 76
April	420 00	.....	224 09	.....	6 00	5 30	.....	655 39
May	420 00	.....	.....	.....	.....	38 00	$225 00	683 00
June	455 00	.....	143 80	55 62	.....	64 94	.....	719 36
July	420 00	.....	263 05	.....	.....	20 00	.....	703 05
August	420 00	.....	28 35	21 80	.....	.....	.....	470 15
September	446 34	.....	.....	62 73	.....	.....	.....	509 07
October	435 00	.....	20 15	.....	.....	.....	.....	455 15
November	435 00	.....	343 53	.....	.....	.....	215 00	993 53
Total	$4,961 34	$ 600	$1,218 12	$257 23	$13 96	$171 69	$440 00	$7,068 34

House Offal Department.

Monthly Accounts.	Amount Expended.	Amount Received.	Receipts above Expenditures.	Expenditures above Receipts.
1879.				
December.....	$521 53	$276 87	.....	$244 66
1880.				
January	420 95	859 79	$438 84	.....
February	425 40	153 99	.....	271 41
March	511 76	239 78	.....	271 98
April	655 39	750 94	95 55	.....
May	683 00	160 47	.....	522 53
June.....	719 36	187 09	.....	532 27
July	703 05	719 28	16 23	.....
August	470 15	152 08	.....	318 07
September.....	509 07	164 84	.....	344 23
October.....	455 15	981 09	525 94	.....
November	993 53	201 42	.....	792 11
Total	$7,068 34	$4,847 64	$1,076 56	$3,297 26

Amount expended	$7,068 34
Amount received	4,847 64
Net cost	$2,220 70

REPORT

OF

THE WARDEN OF THE ALMSHOUSE.

CAMBRIDGE, Dec. 1, 1880.

To the Overseers of the Poor:

GENTLEMEN, — I herewith respectfully submit my annual report for the year ending Nov. 30, 1880.

The whole number of inmates at the almshouse during the year ending Nov. 30, 1880: —

Males	139	
Females	112	
Total	—	251
Average per month	135	

The whole number admitted during the year ending Nov. 30, 1880: —

Males	66	
Females	61	
Total	—	127
Average	11	

Of these 91 were on permits and 36 on court sentences.

The whole number discharged during the year ending Nov. 30, 1880: —

Males	72	
Females	63	
Total	—	135

Of these there were 6 insane, 4 being taken by their friends, 2 transferred to the Danvers Asylum.

Classification of cases under sentence by court during the year: —

Truancy	15	
Drunkenness	14	
Vagrancy	4	
Larceny	2	
Disturbing the peace	1	
Total	—	36

The whole number present Nov. 30, 1880: —

Males	67	
Females	49	
Total	—	116

Of these there were 80 adults, 36 minors.

The whole number of children attending school Nov. 30, 1880: —

Boys	26	
Girls	3	
Total	—	29

The whole number of inmates present Nov. 30, 1879: —

Males	76	
Females	55	
Total	—	131

Of these there were 87 adults, 44 minors.

Whole number of children attending school Nov. 30, 1879: —

Boys	29	
Girls	3	
Total	—	32

Included in the total number of inmates present Nov. 30, 1880, are the insane as follows: —

Males	8	
Females	9	
Total	—	17

School.

The average number attending school during the year is 32. Miss Hattie Butler, the teacher, still governs with ease and dignity, and taking into consideration the fact that the school is mostly composed of habitual truants, the progress in their several studies is most excellent.

Religious Services.

The services on Sunday are very interesting, the Rev. F. W. Holland being the chaplain. They commence each Sunday at 1.15 P. M., and close at 2.15. The singing is by the school children, accompanied by the organ.

Hospital Department.

There are at present but 14 patients, including both male and female departments, all but one of which are chronic cases. The sanitary condition of the institution is most excellent, there having been no contagious diseases during the year of any account, and no deaths caused by sickness contracted while at the house.

I herewith append a list of deaths during the year ending Nov. 30, 1880: —

NAMES.	Age.	Admitted.	Died.	Disease.
Rebecca Hattenberg	60	June 4, '78.	April 15, '80.	Consumption.
Alex. B. Inglis	57	Feb. 11, '80.	April 6, '80.	Consumption.
Bridget Flynn	67	Oct. 5, '80.	Oct. 17, '80	Consumption.
Isaac Keyes	84	June 23, '80.	June 29, '80.	Heart Disease.
Amos Conley	4 mos.	July 3, '80.	July 9, '80.	Whooping Cough.
J. Frank Mason	35	Feb. 25, '80.	July 22, '80.	Consumption.
Ellen Scully	64	Feb. 5, '76.	June 19, '80.	Chronic Ulcers.
Daniel Sullivan	44	Sept. 10, '79.	May 9, '80.	Consumption.
Maggie Munion	3 mos.	Nov. 15, '79.	Feb. 12, '80.	Cong. Syphilis.
Alice Caldwell	78	Mar. 13, '80.	Mar. 25, '80.	Consumption.
Peter Rourke	65	July 8, '79.	Jan. 6, '80.	Consumption.
Horace S. Skelton	87	July 28, '79.	Jan. 15, '80.	Chronic Ulcers.
Alice James	26	Dec. 22, '79.	Dec. 24, '79.	Bright's Disease.
Ivanora McWhinnie	21	Dec. 27, '79.	Dec. 28, '79.	Consumption.

Industrial.

The farm is managed in the usual manner, there being but one hired man, and the remainder of the work being performed by the inmates, the results of which may be seen by referring to the tabular statements entitled "Farm and Ledge Department."

Ledge.

The quarry is being worked to good advantage, there being two men hired who thoroughly understand the business. The able-bodied inmates are employed there when not otherwise engaged.

The demand during the past year has exceeded the supply to a large extent, but I do not understand it to be the wish of the Board to employ hired labor except what is necessary to prepare the quarry for the unskilled workmen. Consequently, I was obliged to decline to fill a part of the orders, thereby carrying out the idea to preserve the ledge, for able-bodied inmates, and for applicants for outside aid who are willing to labor for assistance rendered.

Health Department.

The collection of the city offal is now quite a department of itself. I caused two extra wagons to be put on, commencing on the first of May last, and still continue them the larger part of the time. I most respectfully suggest the necessity of building two wagons this winter, and making the necessary arrangements to place them on the streets as early as the first of next May. If it is not necessary to use them every day, the men can work in the quarry in the interim. By so doing, I think the work can be done satisfactorily.

Respectfully submitted,

WM. E. HOUGH, *Warden*

The following statement shows the products of the farm, with the estimated value of the same: —

500 bushels potatoes	$375 00
140 bushels rye	126 00
60 bushels onions	60 00
140 bushels tomatoes	63 00
50 bushels sweet corn	20 00
50 bushels beans	25 00
80 bushels turnips	40 00
1,800 bunches asparagus	216 00
10,000 heads cabbage	400 00
1 ton squash	40 00
18 tons English hay	360 00
20 tons rye straw	500 00
½ ton carrots	7 50
¼ ton parsnips	30 00
2 tons mangel wurzels	20 00
150 boxes strawberries	15 00
5 barrels apples	5 00
2 barrels pears	2 00
200 dozen cucumbers	24 00
300 heads celery	30 00
Total	$2,733 50

REPORT

OF

THE CITY PHYSICIAN.

To the City Council of Cambridge:

GENTLEMEN, — In accordance with the provisions of Chap. 25 of the ordinances of the city of Cambridge, I have the honor to submit the following report of the office, for the ten months beginning Feb. 1, 1880, and ending Nov. 30, 1880.

Accepting the permission contained in the above-named ordinance, I have appointed Dr. O. C. Turner Assistant City Physician, and this appointment has received the approval of the Mayor and Aldermen.

Two thousand one hundred and eighty-seven visits have been made to three hundred and twenty-six different patients, — sick poor outside of the almshouse, — one hundred and thirty-three vaccinations performed, and twenty-one persons supposed to be insane examined.

The sick at the almshouse have been seen whenever necessary. In the hospital at the almshouse forty-six persons have received medical treatment. The whole number of deaths among all the classes of sick above enumerated was thirty-eight, of which ten took place in the almshouse. No cases of serious disease have occurred among the children at the almshouse.

Twenty-seven applicants for State aid have been examined.

At the request of the Mayor or Chief of Police, I have examined fifteen candidates for appointment on the police force, to ascertain their physical qualifications for performing the duties of the office.

Thirty certificates of the cause of death have been given in the cases of those who have died without a physician in attendance, — the law demands such a certificate, — and these examinations are made to meet the requirements of the law and to make as perfect as possible the statistics relating to causes of death. These examinations do not extend to the deaths suspected to be criminal: these are examined by the Medical Examiner, and he gives the certificate.

I have also examined three persons claiming damages from the city for injuries received by reason of defects in the streets.

In conclusion, I wish to acknowledge the faithful and valuable services of my assistant, Dr. Turner.

Respectfully submitted,

H. P. WALCOTT, M. D., *City Physician.*

Office of City Physician,
Cambridge, Dec. 28, 1880.

ANNUAL REPORT

OF THE

CHIEF ENGINEER OF THE FIRE DEPARTMENT

For the Year ending Nov. 30, 1880.

Chief Engineer's Office, City Hall,
Cambridge, Nov. 30, 1880.

To the Honorable City Council:

Gentlemen, — In compliance with Sect. 6 of the ordinance in relation to the Fire Department, I herewith respectfully present my Second Annual Report, which contains a statement of the condition of the department, the changes in membership which have occurred during the year, with a record of fires, the losses and insurance, and such other information as is required.

Members.

The department consists of ninety-seven men as follows: A chief and three assistant engineers, sixty members of steamer companies, twenty-eight members of hook and ladder companies, two members of chemical engine, a relief engineer, and two telegraph operators. Of this number twenty-two are permanently employed, the remainder being call-men.

Apparatus.

The apparatus is in good working order, with a few exceptions. Engine No. 2 is at present in the repair shop, for the purpose of being furnished with a new boiler, and such other needed repairs as may be found necessary to put the engine in working order. I would recommend that Hose Carriage No. 4

be placed in the shop during the coming year for the purpose of having the iron-work repaired, a new set of wheels, and the carriage painted. Hook and Ladder Truck No. 1 will also need slight repairs.

Relief Valves.

Last year the Committee on Fire Department caused a relief valve of the Shaw pattern to be placed upon Engine No. 2, and one of the Myer pattern on Engine No. 4, and after a trial of several months the present committee voted to adopt the Shaw valve, and purchased one for each of the above engines.

Hose.

During the year 3,000 feet of cotton hose have been purchased from the Boston Woven Hose Company. The total amount now in service is 12,700 feet, — 7,050 cotton, and 5,650 leather; 1,736 feet of condemned leather hose was exchanged in part payment for the cotton hose purchased. The leather hose now in service is not considered reliable, and I would recommend the purchasing of a quantity of new hose each year, until it is replaced.

Horses.

The several horses employed in this department are generally in good condition, the number required to perform the duty being twenty-two. During the year three were disposed of: one on account of lameness, and one of old age, which rendered them unfit for the performance of the required duty, and others were purchased to take their places. The latter was in the service nearly seventeen years in connection with Engine No. 3, and was transferred to the city farm, where it is hoped and expected he will receive good care and kind treatment for the remainder of his days. The City Council having voted to discontinue the running of the Supply Hose Carriage, the horse was disposed of, the department having no further use for him.

Chemical Engine.

In the early part of the year President Eliot, of Harvard College, communicated with Mayor Hall, with reference to the

gift of a chemical engine, which the Harvard College Corporation proposed making to the city. The result of this was the offer of three thousand dollars to the City Council for the purchase of an engine, horses, harnesses, and such other equipments as were needed, which was accepted by the City Council; and the Committee on Fire Department, with his Honor the Mayor added, were authorized to make the purchase. After a thorough investigation, one of the Perkins pattern was selected. Some alterations suggested by the committee were made, decreasing the weight without impairing the strength of the engine, and the result was entirely satisfactory. The engine was put in service July 1, 1880, and is located in the Central Square building, Ward Four. The horses have the swinging harnesses with Berry's patent hames attached, and the appointments of the engine are all of the latest and most approved patents.

The total cost as per report of the committee to the City Council was $2,948.45, leaving a balance of $51.55, which was returned to the bursar of the college, and subsequently sent to the Mayor to be expended in a public exhibition of the engine. A very satisfactory exhibition was given in presence of his Honor the Mayor, the Committee on Fire Department, and other members of the City Council, President Eliot of Harvard College, Mayor Sanderson and other members of the city government of Lynn; the latter were present by invitation, and during the day were the guests of members of the City Council. The engine has been called into service several times, twice to fires in dwellings; and on these occasions with good results, as the loss by water was very slight.

The portion of the city selected for the location of this engine being largely made up of dwellings in which slight fires are liable to occur, in my opinion, the engine will be a valuable addition to the department.

Fire-Alarm Telegraph.

During the year this most important branch of the service has continued to work satisfactorily. Several changes have been made in the location of the wires and resetting of poles.

The lines have been extended into the annexed territory, poles having been provided for that purpose, and Box 92, formerly located on the building of John P. Squire & Co., Gore Street, has been removed, and located on the corner of Cushing and Locust Streets, and Box 4 substituted for the one removed. In addition to the above changes, Harvard College Corporation purchased a box, 54, and located it on the south side of Memorial Hall, and permission was granted to connect it with the Fire Alarm; and although it remains the private property of the college authorities, it is understood that it may be used in case of fire in the immediate vicinity. I would renew my recommendation of last year, and ask that a signal box be located in the vicinity of Winsor and Hampshire Streets; also that one be placed on or near the pumping station at Fresh Pond.

Houses.

The City Council having voted to remove Hook and Ladder Truck No. 1 to the building in Brattle Square, it was found necessary to change the grade to the entrance; also to construct stalls, and lower the floor in part, and make other slight alterations, at a cost of about $500. The floors of the engine-room and stable of the house occupied by Steamer No. 4 have been renewed, and the houses of Engines 2 and 5 are now undergoing repairs. The remaining houses will need only the usual repairs during the coming year.

I desire, however, to call the attention of the City Council to the need of procuring a suitable room for the meetings of Hook and Ladder Company No. 1 in their new quarters.

Appropriation, Receipts, and Expenditures.

The amount of appropriation for the department at the beginning of the year was $62,000; the receipts, $517.87; the expenditures $61,955.75; leaving an unexpended balance of $44.25.

The principal items of expenditure were as follows: —

Services of members	$30,553 68
Apparatus and repairs	837 48
Fuel	1,091 99
Gas	1,145 78

Hay, grain, and straw	$2,312 88
Houses, repairs of	1,294 44
Hose and repairs	2,161 56
Water hydrants and reservoirs	17,520 00
Miscellaneous	5,037 94
	$61,955 75
Balance unexpended	44 25
Total appropriation	$62,000 00

Admissions, Discharges, and Transfers.

Engine Co. No. 1. Thomas W. Jones was discharged at his own request, Sept. 18, and Walter H. Green appointed to fill the vacancy, Sept. 22.

Engine Co. No. 2. William H. Foss transferred from driver of Hose 2 to driver of Chemical Engine, June 30. Albert F. Sawyer appointed driver of Hose 2, June 30, and John Haley appointed hoseman same date.

Engine Co. No. 3. Michael G. Collins was discharged for conduct unbecoming a member of the department, March 20; Timothy J. Mahoney appointed to fill the vacancy, April 14. Cornelius J. Donovan discharged, Aug. 18; Alexander S. Atkins, Aug. 31, — at their own request. Louis J. Stanger and William H. Murray were appointed to fill the vacancies, Sept 1.

Engine Co. No. 4. Charles F. Soule discharged at his own request, March 10; James W. Wright was appointed to fill the vacancy, March 24. John W. Holbrook, assistant foreman, discharged at his own request, March 31. Josiah P. Parsons was appointed hoseman, June 23. George E. Muzzey discharged at his own request, Aug. 31; George W. Gilman appointed to fill vacancy, Sept. 1.

Engine Co. No. 5. John D. DeRonde transferred to Hook and Ladder Co. No. 2, Feb. 11. Charles W. Porter, fireman of engine, discharged at his own request, Oct. 9; and George W. McIntire appointed to fill vacancy, same date.

Hook and Ladder Co. No. 1. Elisha W. Morey not reappointed, Jan. 7; William R. Mitchell appointed to fill the vacancy, same date. Charles E. Warren transferred to Engine

Co. No. 5, March 2; and John A. Bartlett appointed to fill vacancy, March 10. Lewis C. Clark transferred from driver of Truck No. 1, to engineman of Chemical No. 1, June 30. Charles H. Wiggin, Jr., discharged at his own request, Aug. 31.

Hook and Ladder Co. No. 2. Alford F. Chadwick and Jacob F. Bradeen not reappointed. James F. Dalton appointed Jan. 7, and Elisha W. Morey Jan. 14, to fill vacancies. Charles L. Pike discharged at his own request, Feb. 11. Elisha W. Morey transferred to Hook and Ladder Co. No. 1, Aug. 31; Michael H. Shea appointed to fill the vacancy, Sept. 1. Philip C. Munroe discharged at his own request, Sept. 20; and Elbridge L. Wheeler appointed to fill vacancy, same date.

Supply Hose No. 1. Albert S. Benson transferred from driver of hose carriage to driver of Truck No. 1, June 30.

Accidents.

Dec. 15. Warren H. Dow, of Hook and Ladder No. 1, while in service, was severely cut on the hand by falling slate.

Jan. 16. Engine No. 1, of Somerville, while on the way to render assistance at the fire on Gale & Wood's wharf, was upset and badly damaged in turning the corner of Broadway and Third Street. Henry A. Byrnes, engineer, and William H. Bonner, driver, were severely injured, the former receiving bruises about the body and cut on the head, rendering him insensible; the latter, bruises and a sprained ankle.

Jan. 16. Robert T. Hixon, driver of Hose Carriage No. 1, was kicked on the knee by his horse, while in service at a fire, and painfully injured.

June 30. Assistant Engineer Brackett, while in service, received a severe cut in the head by falling down stairs.

Aug. 27. Charles R. Hooker, driver of Engine No. 4, received a severe strain and cut in his neck, by coming in contact with a rope which was stretched across the street, and which parties were trying to raise, in order to let the engine pass under it.

Oct. 3. William Murphy was thrown down and slightly injured by Hose Carriage No. 4, while on its way to a fire.

Nov. 10. Francis P. Carr, driver of Hose Carriage No. 5, was painfully burned in the arms while in service, by flames bursting from a burning building.

Acknowledgments.

I desire, in concluding this report, to return my sincere thanks to his Honor the Mayor, and to the Committee on Fire Department, for the interest they have taken, and the prompt manner in which the wants of the service have been attended to. To all others who have in any way aided the department in the performance of its duties I feel under obligation.

Respectfully submitted,

THOMAS J. CASEY,
Chief Engineer.

APPENDIX.

Joint Standing Committee on Fire Department.

ALDERMEN..... Chapman and Gilmore.
COUNCILMEN ..... Parsons, Bennink, and Fitzpatrick.

Board of Engineers.

Name.	Residence.	Rank.	Age.
Thomas J. Casey.....	173 Cambridge St. ..	Chief	47
Richard F. Tobin.....	5 Winsor St.	1st Assistant..	36
Nathaniel W. Bunker...	6 Beech St.	2d Assistant ..	37
Charles W. Brackett....	133 Mt. Auburn St...	3d Assistant ..	44
Nathaniel W. Bunker...		Secretary.....	

Engine Company No. 1.

House, Brattle Square.

Name.	Rank.	Age.	No. of Badge.
Edward E. Priest	Engineer	43	3
Hiram W. Hooker	Driver.....	42	5
Robert T. Hixon.....	"	36	10
William H. Emery.....	Foreman.....	47	1
John H. Brown.....	Asst. Foreman	29	11
Edward E. Keyes	Fireman	29	7
John L. Jones, Jr.....	Hoseman	29	4
John K. Perkins	"	30	12
Edward B. O'Brien.....	"	29	9
James Jefferson.....	"	27	2
John B. Byron.....	"	30	6
Walter H. Green.....	"	24	8

Engine Company No. 2.

House, Main Street, near Winsor.

Name.	Rank.	Age.	No. of Badge.
Thomas Wiseman	Engineer	36	17
John H. Walker	Driver	51	19
Albert F. Sawyer	"	37	20
William B. Cade	Foreman	46	15
Daniel McCarthy	Asst. Foreman	44	21
Charles E. Conner	Fireman	29	23
Arthur C. Day	Hoseman	43	25
James Cunningham	"	38	28
Benjamin D. Foss	"	44	18
Joseph Fellows	"	29	22
John McCarthy	"	30	24
John Haley	"	26	27

Engine Company No. 3.

House, Fourth Street, near Cambridge.

Name.	Rank.	Age.	No. of Badge.
Hiram Blood	Engineer	48	31
James S. Casey	Driver	44	33
Lorenzo H. Dale	"	38	34
William Parker	Foreman	40	29
William F. Newman	Asst. Foreman	34	38
Elliot E. Alley	Fireman	44	30
Edwin Winward	Hoseman	34	40
John Casey	"	30	41
Walter Baker	"	26	42
Timothy J. Mahoney	"	32	36
William H. Murray	"	29	35
Louis J. Stanger	"	26	32

Engine Company No. 4.

House, North Avenue, near Russell Street.

Name.	Rank.	Age.	No. of Badge.
John E. Ricker	Engineer	36	45
Charles R. Hooker	Driver	36	48
Sylvanus G. Griffin	"	33	46
Edgar H. Locke	Foreman	33	53
William J. Hanna	Asst. Foreman	34	52
Benjamin Young	Fireman	36	49
Hugh T. Barker	Hoseman	29	51
J. Herbert Griffin	"	27	55
Arthur C. Griffin	"	30	44
James W. Wright	"	23	56
Josiah P. Parsons	"	32	43
George W. Gilman	"	23	54

Engine Company No. 5.

House, Inman Square.

Name.	Rank.	Age.	No. of Badge.
Charles E. Berry	Engineer	33	102
Joseph P. Cartwright	Driver	44	104
Francis P. Carr	"	36	105
Francis P. Scanlan	Foreman	34	100
Conrad D. Kinnear	Asst. Foreman	41	101
George W. McIntire	Fireman	25	103
James F. Glynn	Hoseman	29	109
John Fitzgerald	"	33	110
Thomas McIntire, Jr.	"	28	111
Frank C. Mullett	"	28	106
William T. King	"	24	107
Charles E. Warren	"	36	108

Chemical Engine Company No. 1.

House, Central Square Building.

Name.	Rank.	Age.	No. of Badge
Lewis C. Clark	Engineman	35	78
William H. Foss	Driver	40	76

Relief Engineer.

Name.	Rank.	Age.
John D. Thompson	Engineer	39

Hook-and-Ladder Company No. 1.

House, Brattle Square.

Name.	Rank.	Age.	No. of Badge.
Albert S. Benson	Driver	36	72
Charles Emerson	Foreman	35	69
John T. Mahaffy	Asst. Foreman	35	67
James P. Ewell	Ladderman	44	62
Charles H. Waite	"	34	73
William Parks	"	36	77
William H. Lydston	"	33	68
Clarence A. Moore	"	30	58
Charles A. Sharon	"	31	64
Joseph B. Farmer	"	42	74
Warren H. Dow	"	30	71
Elisha W. Morey	"	33	70
William R. Mitchell	"	28	57
John A. Bartlett	"	47	65

Hook-and-Ladder Company No. 2.

House, Cambridge Street, corner of Portland.

Name.	Rank.	Age.	No. of Badge.
Jeremiah R. Hobbs	Driver	33	81
Thomas L. Hunter	Foreman	40	84
James M. Keaney	Asst. Foreman	29	94
Walter R. Marsh	Ladderman	43	83
Orville W. Van Duzee	"	34	82
George H. Taylor	"	48	79
William Haley	"	32	86
Charles H. Chapman	"	27	89
George E. Carter	"	31	80
Joseph E. Chick	"	30	87
John D. De Ronde	"	41	85
Michael H. Shea	"	26	90
James F. Dalton	"	43	95
Elbridge L. Wheeler	"	36	91

Fire-Alarm Telegraph.

Battery Room, Brattle Square Building.

Name.	Rank.	Age.
George J. Blaisdell	Telegraph Operator	36
David J. Campbell	Asst. Telegraph Operator	33

FIRES AND ALARMS

For the Year commencing Dec. 1, 1879, and ending Nov. 30, 1880.

DECEMBER.

Tuesday, Dec. 2, 11.07 A. M. Box 7.

Conlan's Court. Dwelling-house owned by Patrick Conlan. Occupied by T. B. Hennessey. Loss trifling. Fire caused by matches in pocket of pantaloons.

Thursday, Dec. 4, 12.20 P. M. Box 46.

Main Street. Dwelling-house owned by H. H. Leavitt; occupied by W. H. Raymond. Loss on building and contents, $110. Insurance paid, $110. Cause of fire, overheated furnace pipe.

Saturday, Dec. 6, 3.15 A. M. Box 74.

Dublin Street. Brick-shed owned and occupied by G. W. Wyatt. Loss, $15. No insurance. Cause of fire unknown.

Thursday, Dec. 11, 8.41 P. M. Box 53.

Mount Auburn Street. False alarm caused by some malicious person tampering with the box.

Monday, Dec. 15, 11.15 A. M. Box 59.

College yard. Dormitory owned by Harvard College corporation, and occupied by several parties. Loss, $1,850. Insurance paid, $1,850. Cause of fire, hot ashes placed in closet.

Monday, Dec. 15, 5.20 P. M. Box 25.

Blanche Street. Curtain manufactory owned and occupied by Brown, Murphy & Thorndike. Loss trifling. Cause of fire, a lighted match carelessly dropped into benzine.

Tuesday, Dec. 16, 10.12 A. M. Box 2.

Near Prison Point Street. Engine-house owned and occupied by the Boston and Maine Railroad Company. Loss, $2,100. Insurance paid, $2,100. Cause of fire, sparks from chimney setting fire to roof.

FRIDAY, Dec. 19, 6.40 P. M. Bell alarm.

Main Street. Stable owned by Eben Denton; occupied by Halliday & Springfield. Loss on building and contents, $60. Insurance paid, $20. Cause of fire unknown.

SATURDAY, Dec. 20, 12.50 A. M.

Fire in Boston, Brighton District. Engine Co. No. 1 responded, under command of Assistant Engineer Brackett.

THURSDAY, Dec. 25, 11.55 A. M. Box 59.

Brattle Street. Hall and stores owned by Charles Moore, and occupied by Charles Moore and others. Loss on building and contents, $1,598. Insurance paid, $1,598. Cause of fire, incendiary.

MONDAY, Dec. 29, 12.28 A. M. Box 2.

Fire in Boston. Engines Nos. 3 and 5 and Truck 2 rendered assistance under command of Assistant Engineer Tobin.

JANUARY.

WEDNESDAY, Jan. 7, 6.02 P. M. Box 25.

Pacific Street. Storehouse owned and occupied by Jaynes & Co. No loss. Cause of fire unknown. Chief Casey absent, out of city.

SUNDAY, Jan. 11, 11.10 A. M. Box 25.

Main Street. Bakehouse owned and occupied by F. A. Kennedy. Loss trifling. Cause of fire, boiling lard igniting.

TUESDAY, Jan. 13, 10.40 A. M. Box 34.

Columbia Street. Dwelling-house owned and occupied by Mrs. Caroline Perham. Loss trifling. Cause of fire, explosion of gas in cellar. Assistant Engineer Tobin absent, out of city.

FRIDAY, Jan. 16, 6.49 P. M. Box 16.

(Two alarms given.)

Sixth Street. Oil works owned and occupied by Capen, Sprague & Co. Loss, $28,000. Insurance paid, $20,300. Also storehouse for gasoline owned and occupied by A. G. Paul. Loss, $75. No insurance. Cause of fire unknown.

FRIDAY, Jan. 16, 10.25 P. M. Box 6.

(Two alarms given.)

Main Street. Lumber yard owned and occupied by Gale & Wood. Loss, $3,000. Insurance paid, $3,000. Cause of fire, incendiary. Assistant Engineer Bunker absent, sickness in family.

FRIDAY, Jan. 23, 8.39 P. M. Box 25.

Main Street. Dwelling-house owned by W. A. Mason; occupied by Mrs. C. G. Chute and others. No loss. Smoking chimney; alarm needless.

SATURDAY, Jan. 24, 7.50 A. M. Box 46.

Main Street. Dwelling-house owned and occupied by W. H. Raymond. Loss trifling. Cause of fire, burning soot in chimney.

FEBRUARY.

MONDAY, Feb. 2, 9.04 A. M. Box 9.

Gore Street. Dwelling-house owned by heirs of E. McIntire; occupied by J. C. Pollard. Loss, $16. Insurance paid, $6.38. Cause of fire, children playing with matches.

MONDAY, Feb. 2, 12.36 P. M. Box 26.

Harrison Street. Dwelling-house owned by Mrs. Bridget Casey; occupied by several parties. Loss, $22.35. Insurance paid, $22.35. Cause, sparks from chimney.

WEDNESDAY, Feb. 25. (Still alarm.)

Mt. Auburn Street. Dwelling-house owned and occupied by Mrs. Harriet Morgan. Loss, $50. Insurance, $50. Cause of fire, defective hearth.

THURSDAY, Feb. 26, 1.41 P. M. Box 27.

Washington Street. Dwelling-house owned by D. A. Buckley; unoccupied. Loss, $25. No insurance. Caused by mischievous boys. Assistant Engineer Tobin absent, out of city.

MARCH.

TUESDAY, March 2, 8.30 P. M. (Still alarm.)

Washington Street. Dwelling-house owned by Alexander McGoom; occupied by Mrs. Mary Sheridan. Loss, $15. No insurance. Cause, burning bedclothes.

FRIDAY, March 5, 8 P. M. (Still alarm.)

Elm Street. Dwelling-house owned by Boston Five Cents Savings Bank; occupied by several parties. No loss. Cause, burning soot in chimney.

SUNDAY, March 7, 7.50 P. M. Box 65.

Shepard Street. Dwelling-house owned by J. M. Hilton; occupied by William Cresswell. Loss on building and contents, $38. Insurance paid, $38. Cause of fire, breaking of kerosene lamp.

SUNDAY, March 7, 9.56 P. M. Box 9.

Cambridge Street. Printing office owned by Lechmere National Bank; occupied by Lenfest & Moore. Loss on building and contents, $1,387. Insurance paid, $1,387. Cause of fire unknown.

THURSDAY, March 25, 1.45 A. M. Box 59.

College yard. Dormitory owned by Harvard College Corporation; occupied by several parties. Loss, $15. Insurance paid, $15. Cause of fire, hot coals dropping from open grate.

THURSDAY, March 25, 9.21 A. M. Box 14.

Sixth Street. Smoke-house owned and occupied by Mrs. Magdalena Benz. Loss trifling. No insurance. Cause of fire, defective fireplace.

WEDNESDAY, March 31, 5.18 P. M. Box 92.

Carson Street. Dwelling-house owned and occupied by Mrs. Mary McGovern. Loss trifling. Cause of alarm, pot of meat taking fire on stove.

APRIL.

FRIDAY, April 2, 6.13 P. M. Box 9.

Cambridge Street. Dry-house owned by the Warren Institution for Savings; occupied by F. M. Holmes Furniture Company. Loss on building and contents, $175. Insurance paid, $175. Cause of fire unknown.

SUNDAY, April 4, 6.38 P. M. Box 17.

Main Street. Dwelling-house owned by Boston and Albany Railroad Company, occupied by H. J. O'Brien. Cause of alarm, burning soot in chimney.

WEDNESDAY, April 7, 10.08 P. M. Box 68.

Fire in Somerville. Engine 4 rendered assistance.

THURSDAY, April 8, 5.59 P. M. Box 37.

Jay Street. Dwelling-house owned by F. C. Shepherd; occupied by James Hennessey. Loss trifling. Insurance unknown. Cause of fire, sparks from chimney setting fire to roof. Assistant Engineer Tobin absent, out of city.

TUESDAY, April 13, 12.57 P. M. Box 56.

Rear Kirkland Street. Grove owned by Norton Estate. Alarm caused by burning underbrush and portion of fence.

WEDNESDAY, April 14, 1.32 P. M. Box 79.

Sparks Street. Dwelling-house owned by Patrick O'Connor; occupied by several parties. Loss trifling. Cause unknown. Chief Engineer absent, out of city.

THURSDAY, April 29, 5.55 P. M. Box 25.

Pacific Street. Barrel factory owned by J. G. Russell; occupied by Jaynes & Co. Loss trifling. Cause of fire unknown.

MAY.

SUNDAY, May 2, 3.36 A. M. Box 41.

Somerset Street. Dwelling-house owned and occupied by John Burke. Loss, $20. No insurance. Cause of fire, lighted pipe in bureau drawer.

MONDAY, May 3, 9.30 P. M.

(Bell alarm in Ward 5.)

Fire in Arlington. Engine Co. No. 4 rendered assistance, under command of Assistant Engineer Bunker.

THURSDAY, May 6, 11.38 A. M. Box 2.

Bridge Street. Coal shed owned by J. C and H. Wellington; occupied by Horatio Wellington & Co. Loss trifling. Cause of fire, spark from hoisting engine.

THURSDAY, May 6, 8.07 P. M. Box 6.

Third Street. Tinware manufactory owned and occupied by Boston Stamping Company. Cause of alarm, burning chimney. Alarm needless.

SATURDAY, May 8, 2.20 P. M. (Bell alarm.)

Main Street. Furniture manufactory owned by Allen & Endicott; occupied by Denyven & Couch. Loss trifling. Sparks from chimney setting fire to roof.

SATURDAY, May 8, 10.41 P. M. (Bell alarm.)

School Street. Stable owned by Hatten Heirs; occupied by Edward Fay. Loss trifling. Cause of fire, incendiary.

THURSDAY, May 20, 11.50 A. M. Box 36.

Inman Street. Dwelling-house owned by James Luke; occupied by John Babcock. Loss trifling. Cause, ignition of alcohol.

SATURDAY, May 22, 7.15 A. M. (Still alarm.)

State Street. Telegraph poles owned by Stearns & George. Loss, $50. No insurance. Cause, boys playing with fire.

JUNE.

SUNDAY, June 6, 2.38 P. M. Box 31.

Hunting Street. Dwelling-house owned and occupied by Thomas Dinan. Loss on building and contents, $100. Insurance, $25. Cause of fire, children playing with matches.

SATURDAY, June 12, 7.20 A. M.
(Bell alarm Ward 5.)

Fire in Somerville. Engine 4 rendered assistance.

THURSDAY, June 17, 7.40 A. M. (Bell alarm.)

Holly Street. Dwelling-house owned by E. D. Brooks; occupied by John Joseph. Loss on building and contents, $126.50. Insurance paid, $126.50. Cause of fire, overheated stove.

FRIDAY, June 18, 11.48 A. M. Box 29.

Pine Street. Dwelling-house owned by Mrs. M. E. Colby; occupied by Mrs. E. J. Montgomery. Loss on building and contents, $310. Insurance paid, $260. Cause, sparks from chimney setting fire to roof.

WEDNESDAY, June 30, 9.16 P. M. Box 53.

Cowperthwaite Street. Dwelling-house owned by Mrs. Ann Lynch; occupied by G. W. Allen. Loss, $120. Insurance paid, $100. Cause of fire, supposed incendiary.

JULY.

THURSDAY, July 1, 7.53 P. M. Box 78.

Concord Avenue. Church owned and occupied by St. Peter's Society. No loss. Cause, defective gas burner. Alarm needless.

FRIDAY, July 2, 8.04 P. M. Box 36.

Main Street. Organ manufactory owned by Chamberlin & Hyde; occupied by George Woods & Co. Cause, shavings in boiler-room taking fire. Alarm needless.

SATURDAY, July 3, 11.59 A. M. Box 17.

Harvard Street. Dwelling-house owned by Mrs. A. M. Brazier; occupied by Matthew Johnson. Loss trifling, bedclothes taking fire. Cause unknown. Chief engineer absent, out of city.

MONDAY, July 5, 10.45 A. M. (Still alarm.)

Cambridge Street. Store owned by W. A. Munroe; unoccupied. Loss trifling. Cause, fire-crackers.

MONDAY, July 5, 11 A. M. (Still alarm.)

Winsor Street. Dwelling-house owned by Hollis Thayer; occupied by J. F. Talbot. Loss trifling. Cause, fire-cracker thrown into cellar setting fire to excelsior.

MONDAY, July 5, 3.02 P. M. Box 24.

Pearl Street. Dwelling-house owned by John Lennon; occupied by Henry Martin. Loss, $60. Insurance paid, $60. Cause, sparks from chimney setting fire to roof.

TUESDAY, July 6, 10.16 P. M. Box 6.

Third Street. Tinware manufactory owned and occupied by Boston Stamping Company. Cause, burning chimney. Alarm needless.

SATURDAY, July 17, 9.40 P. M. Box 27.

Harvard Street. Stable owned by Edward Hixon; occupied by Nahum Marshall. Loss on contents, $20. No insurance. Cause unknown.

SATURDAY, July 24, 8.17 P. M. Box 83.

Fresh Pond Lane. Stable and shed owned by Warren Institution for Savings; occupied by J. M. Southwick. Loss on building and contents, $2,125. Insurance paid, $1,325. Cause of fire unknown.

SATURDAY, July 31, 3.59 P. M. Box 41.

Andrew Street. Dwelling-house owned by John Grinham; occupied by several parties. Loss, $240. Insurance paid, $240. Cause, rags in funnel-hole of chimney taking fire and dropping on floor.

AUGUST.

SATURDAY, Aug. 7, 9.40 P. M. (Bell alarm.)

Main Street. Moulding mill owned by D. C. Smart; occupied by D. C. Smart and others. Loss trifling. Cause, shavings in boiler-room taking fire.

TUESDAY, Aug. 10, 8.26 P. M. Box 46.

Green Street. Dwelling-house owned and occupied by Thomas O'Brien. Loss trifling. Cause, lighted pipe in coat-pocket. Assistant Engineer Tobin absent, out of city.

WEDNESDAY, Aug. 11, 4.05 P. M. Box 74.

Dublin Street. Barn owned and occupied by Thomas Neligan. Loss, $103. Insurance paid, $73. Cause of fire unknown. Assistant Engineer Bunker absent, did not hear alarm.

SATURDAY, Aug. 14, 7.22 P. M. Box 53.

Mount Auburn Street. Alarm caused by an insane person representing that his house was on fire.

FRIDAY, Aug. 27, 7.21 P. M. Box 13.

(General alarm given.)

Gore Street. Barrel factory owned and occupied by Goepper Bros. Loss, $12,000. Insurance paid, $12,000. Stable and shed owned by Ellis Heirs; occupied by Goepper Brothers. Loss, $1,000. Insurance, $1,000. Stable and dwelling owned by Mrs. H. A. Bacon; occupied by T. J. Dale and others. Loss, $67. Insurance paid, $67. Stable and spring-bed manufactory owned and occupied by N. Fenton & Co. Loss, $500. Insurance, $500. Cause of fire unknown. Assistant Engineer Brackett absent, out of city.

SUNDAY, Aug. 29, 12.31 A. M. Box 31.

Cambridge Street. Club-room owned by Daniel Boyle; unoccupied. Loss, $177.58. Insurance paid, $177.58. Cause of fire, incendiary.

SEPTEMBER.

SUNDAY, Sept. 5, 9.50 A. M. Box 31.

Willow Street. Dwelling-house owned by heirs of Hugh Kelly; occupied by James Black. Loss trifling. Cause, defective chimney. Assistant Engineer Tobin absent, out of city.

TUESDAY, Sept. 14, 10.31 P. M. Box 6.

Main Street. Machine shop owned and occupied by Rawson & Hittinger. Loss trifling. Cause of fire unknown. Chief Casey and Assistant Engineer Tobin absent, out of city.

SUNDAY, Sept. 26, 8.19 P. M. Box 2.

Prison Point Street. Hay-car owned by Vermont Central Railroad Company. Loss, $300. Insurance, $300. Cause of fire, incendiary.

SUNDAY, Sept. 26, 8.37 P. M. Box 2.

(Two alarms given.)

Prison Point Street. Hay-shed owned by Boston and Lowell Railroad Company; occupied by several parties. Loss on building and contents, $10,388.49. Insurance paid, $7,904.49. Cause, incendiary.

THURSDAY, Sept. 30, 6 P. M. (Still alarm.)

Fourth Street. Dwelling-house owned by Mrs. Justina Dennison; occupied by G. W. Yeaton. Loss trifling. Cause, children playing with matches.

OCTOBER.

SUNDAY, Oct. 3, 8.02 P. M. Box 6.

(General alarm given.)

Main Street. Lumber yard owned and occupied by Gale & Wood. Loss, $4,615.62. Insurance paid, $4,615.62. Cause, incendiary.

MONDAY, Oct. 4, 6.01 P. M. Box 21.

Putnam Avenue. Dwelling-house owned by Edmund Reardon; occupied by Mrs. Bridget Rivers and others. Cause, smoke from chimney Alarm needless.

FRIDAY, Oct. 29, 7.33 P. M. Box 9.

Bridge Street. Blacksmith shop, owned by Mrs. C. O. Brigham; occupied by H. W. Leonard and P. F. Mack. Loss on building and contents, $500. Insurance paid, $375. Cause unknown.

NOVEMBER.

FRIDAY, Nov. 5, 8.40 P. M. Box 57.

Mellen Street. Dwelling-house owned and occupied by H. O. Maynard. Loss, $56. Insurance paid, $56. Cause of fire unknown.

TUESDAY, Nov. 9, 10.15 A. M. Box 48.

Cambridge Street. Stable owned and occupied by Joshua Benshimol. Loss, $100. No insurance. Cause, children and matches.

WEDNESDAY, Nov. 10, 9.10 P. M. Box 35.

Alarm given for a supposed fire in the confectionery establishment, corner of Broadway and Elm Street.

MONDAY, Nov. 22, 1.16 P. M. Box 14.

Sixth Street. Hall owned by Harugari Association; occupied by several parties. Loss, $657. Insurance paid, $657.

MONDAY, Nov. 22, 6.33 P. M. Box 23.

Pearl Street. Dwelling-house owned by M. J. Dailey; occupied by E. F. Foss. Loss trifling. Cause unknown.

TUESDAY, Nov. 23, 4.23 P. M. Box 29.

Pine Street. Dwelling-house owned by E. T. Nichols; occupied by John Googins. No loss. Cause, thawing out water-pipe.

TUESDAY, Nov. 30, 10.14 P. M. Box 28.

Broadway. Machine shop owned and occupied by O. S. Bullock. Loss, $1,244. Insurance paid, $1,244. Cause, supposed incendiary.

Eighty-six alarms have occurred during the year. Of this number, fourteen originated in Ward One; twenty-one in Ward Two; twenty-one in Ward Three; twenty-five in Ward Four; and five in Ward Five. Assistance was rendered out of the city five times, and assistance was received three times.

The amount of loss was	$73,431 54
The amount of insurance paid	61,977 92
Loss over insurance	$11,453 62

REPORT

OF THE

SUPERINTENDENT OF STREETS.

To the Honorable City Council of the City of Cambridge:

GENTLEMEN, — I herewith submit for your consideration a report of operations in, and matters relating to, the Street Department for the financial year ending Nov. 30, 1880: —

The appropriation for the year was	$57,000 00	
Transferred to watering	1,460 00	
		$55,540 00

Expended as follows: —

Gravel	$5,424 27	
Stone	4,292 98	
Labor with men and teams	35,824 54	
Iron work and repairing carts	606 30	
Hay and grain	4,018 66	
Lumber	291 91	
Horse-shoeing	591 07	
Sign painting	39 50	
Stable supplies	83 59	
Hardware	224 83	
Horse doctoring	75 47	
Horses	1,060 00	
Fuel	235 58	
Water	203 78	
Advertising	12 00	
Oil and grease	52 88	
Harnesses and repairs	318 01	
Expressing	2 00	
Printing	14 75	
Plumbing	14 78	
Sealing scales	1 24	
Books	13 30	
Tools and repairing	268 56	
Amounts carried forward	$53,670 00	$55,540 00

Amounts brought forward	$53,670 00	$55,540 00
Superintendent's salary	1,699 99	
Gas	85 87	
Rent of land	50 00	
Land damages	30 00	
		55,535 86
Balance unexpended		$4 24

The streets of our city are in general good condition, but there will have to be more money expended this coming season, as there are now a number of streets that will have to be extensively repaired the coming year, and I think that an appropriation of $75,000 will be needed for next year.

The following streets have been accepted: —

Howard Street, River to Western Avenue.
Webster Avenue, Hampshire to Plymouth.
Hawthorn Street.
Acacia Street.
Meacham Street.
Amory Street, Broadway to Hampshire Street.

Appropriation for paving		$6,000 00

Expended as follows: —

Labor with men and teams	$879 55	
Paving	3,649 77	
Flagging and paving stones	1,241 27	
Bricks	207 30	
Sand	15 87	
		5,993 76
Balance unexpended		$6 24

I desire to call your attention to the matter of paving our principal thoroughfares, and would recommend that a sum of $10,000, be appropriated for paving a part of Main Street. For the general repairs $8,000 will be needed for the coming year.

Appropriation for bridges	$2,800 00	
Transferred to shade trees	500 00	
		$2,300 00

Expended as follows: —

Labor	$1,164 48	
Lumber	1,061 95	
Hardware	63 25	
Iron work	2 50	
		2,292 18
Balance unexpended		$7 82

The bridges are all in good condition, with the exception of Brookline and Walden Street Bridges. Brookline Bridge will need rebuilding above the piling. Walden Street Bridge will need replanking; and I think that an appropriation of $5,000 will be needed for care and repair of bridges for the coming year.

Appropriation for watering streets	$10,960 00	
Revenue	8,000 00	
		$18,960 00

Expended as follows: —

Repairing carts	$349 50	
Water	6,810 00	
Labor with men and teams	10,484 41	
Hose	77 15	
Pipes, etc.	96 60	
Hardware	6 89	
Lumber	31 30	
Use of engines	931 57	
Belting and oil	23 38	
Fuel	127 66	
		18,938 46
Balance unexpended		$21 54

Schedule of Property belonging to Street Department.

Utensils for work on streets	$6,000 00
25 horses	6,200 00
8 double harnesses	350 00
4 wagon harnesses	90 00
4 team chain harnesses	285 00
10 saddles	175 00
33 collars	85 00
17 carts	1,800 00
1 caravan	75 00
1 set runners	75 00
1 plough	5 00
Stable furniture and supplies	40 00
11 snow ploughs	275 00
Stone crusher and engine	4,000 00
5 street rollers	1,300 00
7 sleds	500 00
5,000 brick	50 00
Amount carried forward	$21,305 00

Amount brought forward	$21,305 00
600 yards cracked stone	1,200 00
Stone for cracking	100 00
Railroad track on Cambridge Street	500 00
4 express wagons	275 00
Lot of round and square paving stones	250 00
Lot of edge and flagging stones	150 00
22 watering carts	8,500 00
2 pungs	125 00
Total	$32,405 00

Respectfully submitted,

B. W. WOODARD,

Superintendent of Streets.

REPORT

OF

THE CHIEF OF POLICE.

To the Honorable Mayor and City Council:

Gentlemen, — In compliance with the ordinance regulating the Police Department, I have the honor to submit herewith my Report for the year ending Nov. 30, 1880.

The force as now constituted numbers fifty-six men, divided into day and night reliefs as follows: The night relief consists of one captain, two sergeants, and thirty-three patrolmen. Their hours of duty are from 7 P. M. until 4 A. M. There are also four sergeants in charge of Stations One, Two, Three, and Five from 6 P. M. until 8 A. M., one at each station. In the daytime there are on duty three captains, one in charge of each district, one detective, and eighteen patrolmen. The patrolmen go on duty at 4 A. M., and remain until 8; at that hour, one half are relieved from duty, the others remaining until 1.30 P. M., at which time they are relieved by the first half, who are in turn relieved by the night men at 7 P. M. The day captains have the direction of the officers in their several districts from 4 A. M. until 7 P. M., and the night captain and sergeants from 7 P. M. until 4 A. M. In addition to the regular force, a special officer has been on night duty since the 19th of June in the annexed territory. Special officer Benj. F. Bridden, who has served in the Police Department for twenty-five years, has been detailed for day duty at Station Five in North Cambridge.

Number of arrests made, and miscellaneous work done by the police for the year ending Nov. 30, 1880: —

Arrests		1,479
Males	1,342	
Females	137	
Adults	1,004	
Minors	475	

Causes of Arrest.

Assault and battery	217
Adultery	2
Assault on officers	18
Assault, mutual	32
Assault, felonious	4
Allowing dangerous dog at large	1
Burglary	4
Breaking and entering	27
Bastardy	9
Building bonfire	1
Common drunkard	14
Cruelty to animals	8
Contempt of court	1
Capias	1
Conspiracy	2
Common railer and brawler	2
Common pilferer	1
Carrying concealed weapons	3
Drunkenness	506
Disturbing the peace	57
Disturbing public meeting	5
Delirium tremens	2
Exposing person	1
Escaped prisoners	14
Evading car-fare	2
Fornication	3
False pretences	5
Forcible entrance	11
Forgery	2
Held as witness	1
Insane	24
Larceny	120
Larceny from building	20
Larceny from person	4
Lewd and lascivious	1
Malicious mischief	46
Misdemeanor	9
Obstructing horse car	1
Peddling without a license	8
Robbery	2

Robbery, highway	2
Receiving stolen property	3
Safe keeping	2
Stubborn children	9
Suspicion	10
Surety of the peace	34
Stealing a ride	1
Truancy	23
Vagrancy	46
Violation city ordinance	74
Violation liquor law	29
Violation Sunday law	5
Violation dog law	5
Wilful trespass	45

Miscellaneous Business.

Accidents reported	113
Abandoned children found	1
Buildings found open and secured	148
Cases investigated	398
Dangerous buildings reported	2
Dangerous chimneys reported	3
Dead bodies found	6
Defective cesspools reported	26
Defective drains and vaults reported	34
Defective fire alarms and clocks	1
Defective gas-pipes	3
Defective hydrants	7
Details of officers for extra duty	319
Defective streets and sidewalks	453
Defective water pipes reported	51
Disturbances suppressed	207
Fire alarms given	14
Fires extinguished without alarms	13
Intoxicated persons helped home	92
Lost children restored	220
Sick and injured persons assisted	46
Stray teams put up	52
Street obstructions removed	19
Water running to waste	22
Search warrants served for intoxicating liquors	44
Search warrants served for stolen property	4

Value of property reported stolen	$6,117 80
Value of property recovered	3,120 67

Number of lodgers		1,522
Males	1,446	
Females	76	
Adults	1,469	
Minors	53	
White	1,511	
Colored	11	

Total cost of the department for the year: —

Appropriation and estimated revenue	$61,000 00

Expenditures.

For pay of Chief and Officers	$53,472 98
" fuel	374 28
" gas	595 47
" food for prisoners and supplies	129 18
" surgical attendance	49 00
" telephone, rent of	5 00
" travelling expenses and transportation of prisoners	275 12
" veterinary services	4 00
" repairs of stations and telegraph	238 34
" special services	32 00
" water rates and ice	90 00
" printing and expressing	21 85
" horse keeping and shoeing	271 11
" hardware and repairing harnesses	25 52
" horse	150 00
" buttons, billies, and straps	39 10
" care of boat	5 00
" analysis of liquors	25 90
" burying animals	4 25
" carriage hire	8 00
" directories	12 50
" disinfectants	25 46
" sleigh	35 00
" cleaning stations	104 55
	$56,083 61

Amount paid into treasury on account of		
Officers' Superior Court fees	$57 10	
Officers' Police Court fees	2,107 86	
Officers' fees refunded from State	68 56	
Penalty	10 00	
* *Officers' Police Court fees*	1,154 64	
		3,398 16
Balance showing actual cost		$52,685 45

* The item of $1,154.64, Police Court fees, through a misunderstanding of the Clerk of the Police Court, was not paid into the City Treasury until Dec. 2, after the Auditor's Accounts had been closed for the financial year.

City Property in use by the Police Department.

	Estimated Value.
59 badges	$68 50
50 badges for special officers	62 50
62 billies	31 00
54 parade belts and billies	54 00
2 book-cases	30 00
72 chairs	80 00
6 carpets	38 00
10 tables	60 00
8 desks	125 00
6 lounges	43 00
6 mirrors	13 00
7 clocks	48 00
1 safe	250 00
10 pistols	10 00
Letter scales	75
1 copying machine	15 00
1 hat rack	50
12 pairs handcuffs	22 00
Stakes, ropes, and beetles	125 00
16 buckets	13 00
1 pistol case	1 00
26 cuspidors	13 00
3 umbrella stands	3 00
2 book-racks	5 00
Telegraph line and machines	500 00
4 mattresses and bedding	36 50
4 bedsteads	23 00
1 wardrobe	8 00
8 inkstands	5 75
2 bureaus	5 00
18 law books	44 00
38 blankets	37 00
1 sofa	5 00
5 brushes	3 45
1 sleigh	35 00
1 saddle, bridle, and pads	12 00
1 pair interfering straps	50
125 feet rubber hose	19 00
5 waste-paper baskets	2 50
1 dust-pan	25
20 lanterns	16 00
2 brooms	80
1 map	1 00
Amount carried forward	$1,866 00

Amount brought forward	$1,866 00
4 pairs insect bellows	2 00
3 mats	3 50
4 oil cans	2 50
5 slates	1 75
2 shovels	1 00
4 stretchers	8 00
1 stove	5 00
17 dippers	1 70
20 towels	5 00
4 water-coolers	7 50
1 buggy	50 00
1 boat grapple	25 00
1 currycomb	20
2 horses	225 00
2 horse-blankets	2 00
1 pitchfork	50
1 police wagon	250 00
1 police wagon (two-horse)	200 00
1 pair runners	10 00
1 rubber blanket	1 00
2 water pails	50
1 wagon jack	3 00
1 wrench	1 00
1 pair knee boots	2 50
1 express wagon	75 00
Total estimated value	$2,748 15

The discipline of the department continues good, the members of the force of all grades having performed their several duties in a commendable manner. The newly appointed officers, nine in number, are rapidly becoming accustomed to the practical duties of police officers, and will, I believe, in due time prove themselves efficient and reliable.

There has been an unusual amount of sickness among members of the force during the past year, the aggregate number of the days of absence from duty from this cause having been 270. Detective C. B. Jones has not performed service for the past two months, and is still unable to report for duty. In order properly to protect the large number of dwellings vacated during the summer months, it was found necessary to employ two special officers in Districts One and Two, in addition to the regular force. I again respectfully recommend the purchase of two saddle horses for police service. The expense of their

keeping would be about $400 per year, or less than one half the pay of a regular officer, and in my judgment it would be equivalent to an addition of two men to the force. I also recommend the fitting up of cells in Stations One and Two for the confinement of insane persons. Of the 24 cases during the past year, it became necessary to confine about 20 in the station-houses to await the proper legal forms required before they could be committed to an asylum for the insane. There being no cells provided with padding at these stations, there is a continual danger of self-inflicted injuries to these persons, which in my opinion would be obviated by the adoption of this recommendation.

The whole number of licenses for the sale of intoxicating liquors is 163, classified as follows: —

First class, innholders	5
First class, victuallers	62
Fourth class, grocers	68
Fourth class, apothecaries	25
Fourth class, wholesale	1
Fourth class, bottlers	2

In the month of May, before granting licenses to keep and sell intoxicating liquors, the Board of Mayor and Aldermen directed the Chief of Police to enforce the screen law, and ordered all licensees to remove all screens, curtains, and other obstructions which would interfere with a view of the interior of the licensed premises. Licensed victuallers and grocers were also required to close all entrances other than those from the public streets, and all entrances connecting their places with rooms used for dwelling and lodging purposes. I have caused this law to be faithfully and impartially enforced, and have reported to the Board thirty-nine cases of such violations by licensees.

Every licensed place is inspected twice each week, once during the day, and once by the night officer in the district where the premises are located, and at this date the licensees are all conforming to the law. One of the effects of the enforcement of this law is that with the exception of innholders and apothecaries, there are no licensed places open for business on Sundays in the city of Cambridge. Forty-four visits have

been made to unlicensed places where it was suspected that intoxicating liquors were kept and sold in violation of the law. In twenty-two cases liquors were found, and the persons conducting the business prosecuted. Four of these visits were made on the Lord's Day to dwellings adjoining licensed premises, where liquors had been conveyed in order to carry on a Sunday business. In every case liquors were found, and persons were present evidently for the purpose of purchasing. The arrests for drunkenness were 28 more than in the previous year. In my opinion the law fixing the penalty at $1, unless two previous convictions have been proved within a year, has a tendency to increase the offence of drunkenness.

I wish to express my thanks to his Honor the Mayor, and to the members of the Board of Aldermen, for the generous consideration and forbearance extended toward me, and for the decided manner in which they have sustained all the members of the police force in the performance of their various duties. To his Honor John S. Ladd, Judge of the Police Court, I am greatly indebted for wise and valuable counsel. In transacting business with the heads of other departments of the city government, I have invariably met with the utmost courtesy and consideration. To the members of the Police Department, one and all, I desire to express my appreciation and thanks for the cheerful and efficient manner in which they have performed their various duties.

Respectfully submitted,

FREDERICK W. HAGAR,
Chief of Police.

REPORT

OF

THE SUPERINTENDENT OF LAMPS.

To the Hon. City Council of the City of Cambridge:

The undersigned respectfully submits his Annual Report of the Department of lighting Streets for the year ending Nov. 30, 1880.

The amount appropriated for the current year was $19,500.

The amount expended is as follows: —

For Gas	$11,982 69
Repairs	211 55
Care of lamps and lighting	5,436 19
Cambridge Gas Company, labor, pipe, and fittings	259 15
Posts and lanterns	198 31
Kerosene	149 86
Matches	58 90
Alcohol	67 80
Chimneys	36 28
Fonts	39 73
Ladders	54 00
Lamp-post cocks	21 00
Glass	282 75
Burners	17 35
Burner pipes	7 70
Putty	4 66
Printing	11 25
Carriage hire, Committee on Lamps	8 00
Wicking	4 90
Carting	9 00
Sundries	5 00
Expense, lighting Belmont district	54 00
Superintendent's salary	350 00
	$19,270 07

Cash collected from various parties, for damages on posts and lanterns, and paid into city treasury	$36 59
Balance of appropriation unexpended	229 93
Leaving the net expenditures for the year	19,233 48
	$19,500 00

The cost per lamp for the maintenance of the department for the past year was $23.20.

The number of lamps in the city is as follows: —

District 1	164 gas	1 kerosene.	
2	148 "	21	"
3	151 "	16	"
4	156 "	8	"
5	150 "	14	"
Belmont district		9 naphtha.	
	769	69	
Total			838

Fifteen of the above have been added since my last annual report, and were all paid for by the petitioners for the location.

Nine lamps in the Belmont district were annexed to the department April 19, 1880, and a contract then existing with the United States Street Lighting Company for care and lighting of the same has been accepted and continued for the remainder of the year. May 15, 1880, a contract was made with the Gas Company to furnish the city with gas for the street lamps at $2.25 per thousand feet; and since that time, by the change of 18 lamps from kerosene to gas. the addition of new lamps, and adding a number of cross-street lamps to the all-night list, the number now left burning all night is 500, averaging 10 hours each per night; none of the remaining 338 lamps have been left burning after 12 o'clock at night. And here I venture to incorporate in this report, and call the attention of the City Council, to a recommendation in a previous report: —

" By our system of lighting, nearly all the cross streets of the city are left in total darkness after twelve o'clock at night, and complaints are constantly received by me of the difficulty and danger attendant upon travelling these streets after that hour. It is important in this connection to remember, that communication between the different wards is chiefly by these dark cross streets, Third Street being the only cross street communicating with Ward 3, which is kept lighted all night; and when we consider that in case of fire the steamers, hose carriages, and ladder

trucks of the Fire Department are obliged to traverse these dark streets at a rapid rate, it is surprising that serious accidents are so often avoided. The general complaint of the darkness of the cross streets, and the desire expressed by many of the leading citizens and tax-payers that the lamps throughout the entire city should all be extinguished at the same hour, leads me to renew the recommendation, and I respectfully recommend that the lamps on the side streets be lighted and extinguished at the same hours as the lamps on the main streets. The advantages of a well-lighted city, in respect both to safety and ornament, are so manifest that the change suggested, I believe, will meet with general approval."

Since the above recommendation was made, eighteen of the cross streets have, by order of the Committee on Lamps, been added to the all-night list, leaving 347 lamps, including the Belmont district, that are now extinguished at twelve o'clock.

The street lamps during the year have been burned 1,355,164 hours, an average of 1,646$\frac{2}{3}$ hours each.

The average cost per night for each lamp burning gas was 5$\frac{4}{7}$ cents, for each lamp burning kerosene 1$\frac{1}{2}$ cents per night. The following list will show the streets and places where lamps are kept burning all night: —

Main Street	59	gas		59
Harvard Street	35	"	3 kerosene	38
Broadway	36	"		36
Cambridge Street	41	"		41
Bridge Street	18	"		18
Third Street	14	"		14
Fourth Street	1	"	at Police Station	1
Prison Point Street	10	"		10
Thorndike Street	9	"		9
Otis Street	11	"		11
Brookline Street	10	"	4 kerosene	14
Pearl Street	12	"		12
Magazine Street	14	"		14
River Street	10	"		10
Western Avenue	10	"		10
Green Street	1	"	at Hose House	1
Pleasant Street	6	"		6
Prospect Street	12	"		12
Norfolk Street	7	"	1 kerosene	8
Columbia Street	8	"		8
Winsor Street	6	"	2 kerosene	8
Blackstone Street	1	"		1
Putnam Avenue	6	"		6
Mount Auburn Street	12	"	4 kerosene	16

Brighton Street	3 gas	4 kerosene	7
Harvard Square	4 "		4
Brattle Square	4 "		4
Holmes Place	1 "		1
North Avenue	42 "		42
Concord Avenue	6 "		6
Garden Street	17 "		17
Quincy Street	5 "		5
Craigie Street	4 "		4
Brattle Street	24 "		24
Elmwood Avenue	1 "		1
Kirkland Street	9 "		9
Washington Avenue	1 "		1
Walnut Avenue	2 "		2
Arlington Street	6 "		6
Walden Street	4 "		4
			500

We have in the city of Cambridge eighty-five miles of streets, exclusive of the Belmont district, and 829 street lamps; this gives us an average of one lamp to about 541 feet.

A street to be properly lighted should have the lamps not more than 180 to 200 feet apart. In the business streets of Boston and in the thickly settled districts, the street lamps are about 180 feet apart, in other parts of the city from 180 to 200 feet; and lamps are erected on petition, and at the expense of the city. In our own city the rule was established by the City Council in 1852, "That whenever suitable iron posts and lanterns are erected at such points on any streets in the city as the mayor and aldermen may designate, the mayor is authorized to cause such lamps to be lighted at the expense of the city." This rule has been followed substantially to the present time: the result has been that in the business streets of the city, and other streets occupied by resident owners of real estate, the streets are now well lighted, while large portions of the city, inhabited mostly by poorer people, who are either unable or unwilling to incur the expense of posts and lanterns, have been left in darkness; and I respectfully suggest that the matter is worthy of the attention and consideration of the City Council. In Ward 5 the district included within the bounds of North Avenue, Walden Street, Concord Avenue, and Belmont and Arlington line, about two thirds of the whole

ward is but partially provided with street lamps, there being eight only in the district named. Two other localities in the city are in a similar condition. Ward 1, on one of its main avenues, Brattle Street from Lake View Avenue to the old line of Belmont, a distance of nearly half a mile, sparsely populated and thickly bordered with trees nearly all the way, is entirely destitute of street lamps. This street is the main avenue through our city to Belmont; and the locality named, I think, is at night the darkest and most dangerous place in the city. Several highway robberies have occurred there, and foot travellers seek the middle of the street, rather than the sidewalks, for safety at night. It should be remembered that "a lamp-post is a policeman." I have been requested to call the attention of the City Council to this locality, and ask that measures be taken for lighting this district, not only for the public benefit, but more particularly for the benefit of the citizens of the recently annexed territory.

I would respectfully recommend that under the direction of the Committee on Lamps, a suitable number of lamps be erected on that part of Brattle Street between Lake View Avenue and the Belmont district.

If the Committee on Lamps of the next City Council should see fit to pursue the course adopted by the present committee, of gradually changing the cross-street lamps to the all-night list, the people generally, in my judgment, would approve the plan as a matter of public and private accommodation, and as a means of safety.

Respectfully submitted,

BENJ. F. NOURSE,

Superintendent of Lamps.

REPORT

OF THE

SEALER OF WEIGHTS AND MEASURES.

To his Honor the Mayor and the Board of Aldermen of the City of Cambridge:

GENTLEMEN, — In the performance of my duties I have visited during the year ending Nov. 30, 1880, 412 places of business, and have

Sealed 876 scales.	Adjusted 94.	
Sealed 3,762 weights.	Adjusted 771.	Condemned 13.
Sealed 475 dry measures.	Adjusted 102.	Condemned 15.
Sealed 532 liquid measures.	Adjusted 78.	Condemned 13.
Sealed 61 yard measures.		

The city scales throughout the city have been thoroughly repaired, tried, adjusted, and proved, and are now in good condition. The fees collected, amounting to $323.73, have been paid into the city treasury. The usual amount of work in sealing and adjusting has been done at the office, for which no fee has been charged. The State and city property in possession of the sealer remains the same as last year.

B. F. NOURSE,

Sealer of Weights and Measures.

REPORT

OF THE

MILK INSPECTOR.

To his Honor the Mayor and Board of Aldermen of the City of Cambridge :

My first Annual Report is herewith submitted. On assuming the duties incumbent on the office in January last, I endeavored to acquaint myself thoroughly with the law regulating the sale and inspection of milk, and the duties of the inspector, on whose action depends, in a certain degree, the health of the people.

At this particular time there was considerable alarm on the part of the people, owing to the correspondence on the milk question in our local papers and those of Boston. The matter was freely discussed, and this added to the fears of the people who made a specialty of a milk diet. Complaints commenced pouring in from all parts of the city, samples of milk were brought to the office for inspection, and visits were made, on invitation of some of our best citizens, to inspect milk at their residences, whenever they requested it; and improvement in nearly all cases was again reported. Finding this condition of affairs, I determined to bring the law to the notice of all, and, if possible, bring about that condition of affairs which the law required, and which the citizens had a right to expect from an inspector who attended to his proper duties.

The law made it imperative for every dealer who delivered milk to be registered on the inspector's books, including persons who kept cows and sold milk, and the regular dealers. Not over seventy had ever registered. Wagons were required to be numbered; few, if any, had recognized the law in this

particular; and the whole trade was in a badly demoralized state.

I called for a new registration, and visited all the wards of the city to find out who were keeping cows and furnishing milk within its limits, at the same time inspecting the milk and learning the extent of the business being done in the city, and informing the dealers that the law must be conformed to in each and every particular. Although a very laborious duty, owing to the large extent of territory in the city, I kept on until I had completed the entire city. I commenced registering in February, and registered one hundred and fifteen milkmen, and one hundred and fourteen persons who kept upwards of three hundred and seventy-five cows in the city. This occupied the months of February and March. At this time a revision of the milk law came before the Legislature, the Act, as finally adopted, being as follows: —

[Stat. 1880, Chap. 209.]

An Act to regulate the Inspection and Sale of Milk.

Be it enacted, etc., as follows:

Section 1. In all cities and in all towns in which an inspector or inspectors of milk have been or shall be appointed, all persons who convey milk in carriages or otherwise for the purpose of selling the same in such city or town, shall annually on the first day of May, or within thirty days thereafter, be licensed by the inspector or inspectors of milk of such city or town to sell milk within the limits of the city or town in which said milk is offered for sale; and shall pay to such inspector or inspectors fifty cents each for the use of the city or town. The inspector or inspectors shall pay over monthly all sums collected by him or them to the treasurer of such city or town. Licenses shall be issued only in the names of the owners of carriages or other vehicles; and said licenses shall, for the purposes of this act, be conclusive evidence of ownership. No license shall be sold, assigned or transferred. Each license shall record the name, residence, place of business, number of carriages or other vehicles used, the name and residence of every driver or employé engaged in carrying or selling said milk, if any, and the number of the license. The licensee shall report to the inspector or inspectors any change of driver or employé which may occur during the term of his license. Each licensee before engaging in the sale of milk shall cause his name, number, and place of business to be legibly placed on each outer side of all carriages or vehicles used by him in the conveyance and sale of milk. Whoever shall sell or expose for sale from carriages or other vehicles, or have in his custody or possession with intent so to sell, milk without being first

licensed under the provisions of this section, or shall violate any other of its provisions, shall for the first offence be punished by a fine of not less than thirty nor more than one hundred dollars; and for a second offence by a fine of not less than fifty nor more than three hundred dollars; and for any subsequent offence by a fine of fifty dollars and imprisonment in the house of correction not less than thirty nor more than sixty days.

SECT. 2. All persons before selling or offering for sale milk in stores, booths, stands or market places in any city or in any town in which an inspector or inspectors of milk have been or shall be appointed, shall register in the books of such inspector or inspectors, and shall pay him or them fifty cents for the use of such city or town; and whoever neglects so to register shall be punished for each offence by a fine not exceeding twenty dollars.

SECT. 3. Whoever by himself, his servant or agent, or as the employé of any other person sells, exchanges or delivers, or has in his custody or possession with intent to sell or exchange, or exposes or offers for sale or exchange, adulterated milk, or milk to which water or any foreign substance has been added, or any substance deleterious to the quality of the milk, or milk produced from cows fed on the refuse of distilleries, or from sick or diseased cows, shall for the first offence be punished by a fine of not less than fifty nor more than two hundred dollars; and for a second offence by a fine of not less than one hundred nor more than three hundred dollars, or by imprisonment in the house of correction not less than thirty nor more than sixty days; and for any subsequent offence by a fine of fifty dollars and imprisonment in the house of correction not less than sixty nor more than ninety days.

SECT. 4. Whoever by himself, his servant or agent, or as employé of any other person sells, exchanges or delivers, or has in his custody or possession with intent to sell or exchange, or exposes or offers for sale as pure milk, any milk from which the cream or any part thereof has been removed, shall be punished by the penalties provided in the preceding section.

SECT. 5. Every dealer who shall sell, exchange or deliver, or shall have in his custody or possession with intent to sell or exchange, or deliver for himself or as the employé of any other person or persons, milk from which the cream or any part thereof has been removed, shall distinctly mark in letters not less than one inch in length, in a conspicuous place above the centre upon the outside of every vessel, can or package containing such milk, the words, "SKIMMED MILK"; and such milk shall only be sold in or retailed out of a can, vessel or package so marked. Whoever violates the provisions of this section shall be punished by the penalties provided in Section 3.

SECT. 6. Any inspector of milk or his servant or agent who shall wilfully connive at or assist in any violation of the provisions of this act, shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine of not less than one hundred nor more than three hundred dollars, or by imprisonment not less than thirty nor more than sixty days.

SECT. 7. In all prosecutions under this act, if the milk shall be shown upon analysis to contain more than eighty-seven per centum of watery fluid, or to contain less than thirteen per centum of milk solids, it shall be deemed for the purposes of this act to be adulterated.

SECT. 8. Violations of this act may be prosecuted by complaint or indictment before any court of competent jurisdiction.

SECT. 9. Each inspector shall cause the name and place of business of all persons convicted of selling or having in possession with intent to sell adulterated milk, to be published in two newspapers in the county in which the offence was committed.

SECT. 10. Each inspector shall cause this act to be published once in a newspaper printed in the county in which he resides.

SECT. 11. All acts and parts of acts inconsistent herewith are hereby repealed; but such repeal shall not affect any prosecution now pending.

SECT. 12. This act shall take effect upon its passage. [*Approved April* 22, 1880.]

The new law required the licensing of all dealers, including stores. A new registration was commenced on the first day of May, and occupied the months of May and June. Finding the stores did not respond, I went through the whole city and licensed them, collecting the fees and making a general inspection.

The result of the inspection at the stores was not at all satisfactory, and from a sense of justice to this class of dealers (who were in most cases ignorant of the law), I notified them when I found poor milk of the responsibility of selling such an article.

I found that milk of all grades was being sold at the stores. The principal imposition was the selling of skimmed milk, colored, and diluted with water. This was found in many of the stores in Wards 1, 2, and 3. Large quantities of this article were being sold, many stores retailing from five to fifteen cans a day. The milk was sold cheaply to draw other trade, and during the year I have made it a special point to call at these stores to see that the quality is kept up to the standard required by law, at many of them as often as once a week. Notwithstanding this, certain of the dealers are always willing to take their chances with the stores, to evade the law by supplying a poor article at a low price, and run the risk of prosecution. These always need vigilant watching, and only by persistent efforts can the inspector keep them within the limits of the law.

When the inspection at the stores was commenced in July, I found that most of the poor milk being sold was furnished by a few dealers; and I am happy to say that, whether or not they were too closely watched, and the profits consequently insufficient, some five or six have given up business and left the field to more honorable dealers, who sell a good article at a fair price.

The new law has, in a great measure, overcome a great difficulty which has long been felt. In making prosecutions under the old law, it was almost an impossibility to make a *prima facie* case against a milkman, as there was no lawful standard of milk, and the dealers had their own way and sold with impunity whatever quality they pleased, and at all prices; but since the new law was put in operation, and the dealers, both wholesale and retail, are put under restraint and equally responsible, it has made a more healthy condition of the business, greatly to the benefit of all.

I will here state that the larger part of our milkmen are honorable men, who wish to do an honest business, and get what they are entitled to, — a sufficient margin to give them a fair living, the same as all branches of business demand, and which all fair-minded people expect. But a few dishonorable dealers cast odium upon the whole, and all are consequently looked on with suspicion, and rated accordingly. I learn a large number of the former have resolved themselves into an association for mutual protection for the purpose of establishing a fair, living price for family trade, and likewise for stores, and at the same time to endeavor to put the business where it should be placed, on an honorable basis, and expose the less honorable dealers who live by practising duplicity and fraud. I hope a discriminating public will see at once the importance of the movement, and give them encouragement and support, while at the same time, by patronizing honest dealers, it secures an honest article.

Our supply of milk comes from the neighboring towns and from the cars, which bring the supply from Northern Massachusetts and New Hampshire. The supply for the year has been abundant, and the general quality good. The price paid by the dealers during the summer season, ending Oct. 1, at the cars, was thirty-three cents per can, and while to those coming

from the surrounding towns it varied from twenty-five cents upwards, according to the distance. After October the price at the cars was thirty-five cents, and a corresponding advance with the other dealers. The family price during the summer was on an average six cents per quart, and since Oct. 1 seven cents. The stores paid thirty-five cents per can during the summer, and forty cents after Oct. 1.

Many stores make milk a leading article as an advertisement, and in some cases sell below cost. Stores of this class have been kept under close surveillance, as many made hard bargains with the dealers for the purpose of being able to sell cheaply, and the consequence was that an article was furnished in keeping with the price paid, being skimmed, watered, and colored. Families are themselves to blame for patronizing such places, many going from store to store to save a cent in the quart, while in reality they are encouraging the stores to deal in cheap milk, many being forced to do so to retain their trade. My visitation to the stores was generally received in good faith, and a promise to deal in a good article was the result when the risk and responsibility were fairly stated.

I will here state that no dealer or store can sell an honest article of milk, and do a legitimate business with a living profit, at a less price than six cents per quart in summer and seven cents in winter. Many may sell at cost and sell an honest article; but such prices must inevitably lead to bankruptcy and ruin. Look at the figures and judge for yourselves. Milk during the summer months was sold at the cars at thirty-three cents per can; add three cents per can for icing and cooling, and we have thirty-six cents per can. Say the first cost to the dealer per can of eight quarts is four and one half cents per quart; his capital and expenses are, say, worth certainly two cents additional, and we have six and one half cents. If the people will take the matter under consideration, and see the facts as above stated, they must come to the conclusion that the selling price, as we have stated, is neither excessive nor overrated.

The principal adulteration practised by dealers is the addition of water; and we must frankly say that this is done to an alarming extent by a large number of dealers, the *modus operandi* being as follows: When the milk or supply for the

following day has arrived it is brought to the stable of the dealer, and the doors closed or fastened securely; for within is the sanctum of the dealer and his assistant (if he has any), and "no admission" is the law until business hours are closed. The first business is to "top" the cans for what cream may be wanted, and the remainder is emptied into a tank or vat, where the addition of water is made and the coloring and doctoring done, the usual mode being as follows, although the less scrupulous extend the amount of water to suit the demand and price received: Eight cans milk and one can of water, with sufficient salt and color to keep up appearances and taste. The color which is principally used is a powerful fluid, one half a teaspoonful being sufficient to color the amount above stated, and give it a rich, creamy color. This color is known as Frost's, and also Wells, Richardson & Co.'s butter color. Another color used by liquor dealers is also used; it is a cheaper kind, and leaves a dark sediment in milk. Bicarbonate of soda is also used in warm weather to keep milk from souring. In some cases water has been added to the amount of over thirty per cent. Practice and judgment enable the inspector to distinguish the difference; and the public, if they will call at the office when they have any suspicions, will be received kindly, and any information will be freely given, as his services are always ready during office hours. If the office was oftener consulted there would be less occasion for alarm, as when the dealer learns of such a visit immediate improvement is always the result. The old way of discharging a dealer and taking a new one makes matters worse, and the suspicions still remain.

Extent of the Business.

It may be a matter of interest to many people to learn the extent of the milk business done in this city, and the amount of capital necessary to carry it on. From all sources, as nearly as can be ascertained, there are daily delivered in the city 18,976 quarts of milk, or 4,744 gallons. Estimating the average price at five cents per quart, we have a daily business of $948.80, or yearly amount of $346,312. Almost all dealers have an assistant, and very many two or more, so the

amount of capital necessary to carry on the business is very large. The value of a milk route of 25 cans is variously estimated at from $1,500 to $2,000, according to the amount of family trade, including horses, wagons, cans, etc. We have within the limits of the city some 425 cows kept for the purpose of producing milk for sale, some of the owners making it a special business, others keeping a cow or two for their own use, and selling the surplus milk to their neighbors. A visit to some of the barns where the cattle are kept has been a source of considerable interest; many taking care of the animals with the utmost caution, supplying them with good, wholesome food, and paying particular attention to their cleanliness; others keeping them in low, ill-ventilated sheds, while feeding them almost exclusively on brewers' grains, and their surroundings are anything but inviting. The inspection of milk at these places proved conclusively the benefit of good feeding and cleanliness, which are primary requisites for a good, healthy article.

There have been licensed during the past year by the inspector 290 stores and 240 milkmen or dealers, 530 in all, from whom were received 50 cents each as license fees, amounting to $265.

Only two cases of prosecution have taken place: one of Joseph G. Coolidge, a dealer living in Cambridge, who did not license as required after being duly notified. The case received the minimun fine of the law, of $30 and costs. At a continued hearing in the case, at the request of Mr. Coolidge, the judge placed the case on file on payment of costs. The other case was that of Charles F. Smith, of Boston, a grocer, doing business at No. 245 Broadway. This was a bad case of adulteration, as the following analysis shows: —

Specific gravity		1.037
Cream		.04
Solids not fat	9.56	
Fat	2.06	
Total milk solids		11.62
Water		88.38

This sample upon analysis showed an addition of water of 19.87, being both skimmed and watered, with strong indications of being colored. The case was tried in the Police Court, Dec. 8, the party found guilty, and the fine of $50 and costs

imposed, from which an appeal was taken to the Superior Court at the February term.

There have been made during the year 963 visits to stores, families, and dealers, at which times milk was tested, and if necessary, samples were taken for examination at the office, the examination being principally setting the samples to find the percentage of cream, which takes at least twelve to fourteen hours.

I will state that as a more expeditious and satisfactory way of deciding this result, I would recommend the furnishing of a small, portable centrifugal motion machine, similar to that in use in the office of the Boston inspector, who informs me that by its use the cream can be all raised in ten minutes, and a decision can be reached at once. This would give a great deal of satisfaction to the people who have reason to believe the milk they receive has been skimmed or tampered with, and would make the office more freely patronized for information, which would inevitably produce the best results, with material advantage to the consumer. The cost of the machine is trifling, and the benefit to be derived large.

In submitting this somewhat extended report for your consideration, I beg leave to tender my grateful acknowledgments for the sympathy and support I have received from all classes with whom I have come in contact during my labors, and for the personal and official kindness I have received at your hands.

Respectfully submitted,

JOHN H. FARRELL,
Milk Inspector.

REPORT

OF THE

INSPECTOR OF VINEGAR.

To the Honorable Mayor and Board of Aldermen of the City of Cambridge:

GENTLEMEN, — The Legislature of 1880 passed a law regulating the manufacture and sale of vinegar, and the appointment of inspectors to execute the law. In May last, I was called to the duties of the position. The law is a new one, and was brought about by the manufacturers and dealers in vinegar in Boston and vicinity, who use it as a defence against a vile article from the West, which has flooded our markets, and which is better adapted for the disinfection of sewers than for use as a daily article of food. The law is as follows: —

[STAT. 1880, CHAP. 113.]

AN ACT to regulate the sale of Vinegar.

Be it enacted, etc., as follows:

SECTION 1. Every person who shall manufacture for sale, or who shall offer or expose for sale, as cider vinegar, any vinegar not the legitimate product of pure apple juice, known as apple cider, and not made exclusively of said apple cider, but into which any foreign substances, ingredients, drugs, or acids have been introduced, as shall appear by proper tests, shall for each such offence be punished by a fine of not less than fifty nor more than one hundred dollars.

SECT. 2. Every person who shall manufacture for sale, or who shall offer or expose for sale, any vinegar found upon proper tests to contain any preparation of lead, copper, sulphuric acid or other ingredient injurious to health, shall for each such offence be punished by a fine of not less than one hundred dollars.

SECT. 3. The mayor and aldermen of cities shall, and the selectmen of towns may, annually appoint one or more persons to be inspectors of

vinegar for their respective places, who shall, before entering upon their duties, be sworn to the faithful discharge of the same.

SECT. 4. This Act shall take effect on its passage. [*Approved March* 17, 1880.]

Such quantities of the article above referred to have been thrown on the market, that the manufacturers and farmers were compelled to abandon the legitimate product of the apple to compete with their dishonest rivals. The larger part of this poor article comes from New York, Chicago, and St. Louis, and consists of waste products of distilleries and corn-sugar factories, sharpened up with oil of vitriol, and colored with burnt sugar. It is bright, clear, sharp, and fine-looking, and in general appearance superior to the genuine article. It is put up in fine-looking packages with painted heads, and branded "Pure Cider Vinegar." It costs the receiver in Boston about eight cents a gallon, netting the Western parties about $1.00 per barrel. This article is bought by the retailers at about ten or twelve cents per gallon, and again sold to the consumers for eight to ten cents per quart. The original cost of the poison was about one cent per gallon, the balance being made up in cost of packing, freight, and profits. The law as passed was to protect the people from the consumption of this and similar poisons.

Vinegar is a household necessity, and the poor and rich alike have their cruets, none being so poor as not to have vinegar on their table; for, as a writer has said, "The school-girl spends her last penny for a pickle, the laboring man soaks his meat and cabbage in vinegar, and the delicate lady sips from the thin sliced cucumber the liquid acid as a choice nectar, and the good housewife fills her family jars with choice vegetables and floats them in the purported apple-juice."

When an article is of such daily use it should be pure and free from ingredients of a poisonous nature, and it is one in which all are vitally interested. During the time I have been inspector, I have taken a great many samples of the article from different sections of the city, and examined them at the office. I have chiefly looked for the presence of sulphuric acid or vitriol, and when I have had reasonable doubt, I have consulted the Boston inspector, who has aided me in very many

ways to correct the sale of this spurious article. The inspection, as far as made, has determined the fact that not over one fourth of the vinegar sold as "Cider Vinegar" ever came in contact with or formed a part of the original apple. A great deal of it is made of acetic acid. The common acetic acid of commerce is made principally by the destructive distillation of wood; lime is saturated with this article, forming what is known as acetate of lime. The acid is again set free by sulphuric acid with various distillations, and produces a very sharp, pungent, penetrating acid, which is now largely used in manufacturing vinegar, and sharpening up poor qualities. If acetic acid made by this process was carefully refined, it would be made less objectionable than the low grades put upon the market. Competition in this article is so great that only the cheaper grades find a ready sale, which are acrid, pungent, and unfit to be taken into the human stomach.

When we consider that a large portion of the vinegar in general use is made of acetic acid, or the refuse of distilleries, poor molasses, and corn-starch saturated with sulphuric acid (grape sugar), it must be apparent to every one that great injury must arise from the daily use of such artificial compounds. When the consumers are compelled to pay for this vile stuff what a good, wholesome article is worth, the nature of the swindle is apparent.

One of the principal evasions of the law is, an article can be sold as vinegar (unless poisonous ingredients are proved present), but not as cider vinegar; consequently careful judgment must be used in order to determine whether the article is apple vinegar or an article compounded of poisonous drugs and chemicals, before resorting to the services of a chemist for analysis.

The English government has passed stringent and effective laws in regard to this article, and continues to enforce them; the result is, the absolute purity of the article produced, with larger sales, while large quantities are consumed in this country, greatly to the detriment of home products.

So great is the anxiety of the people in regard to the adulteration of food, that a bill is now in preparation by the National Board of Health, whereby severe penalties are attached for the adulteration of all kinds of food.

A desire of profit is the great incentive to adulteration; as, in the case of vinegar, sulphuric acid of the value of one cent is capable of making three or four gallons of vinegar. The result of constant use of this compound is the dread disease dyspepsia and other kindred diseases, and an early decay of the teeth, which is very apparent in all classes of people; many children being obliged to resort to the use of artificial teeth.

Thanking you, gentlemen, for uniform courtesy extended to me, and all others for kind assistance in the discharge of my duty, this report is respectfully submitted.

JOHN H. FARRELL,
Vinegar Inspector.

REPORT

OF

THE CITY ENGINEER.

Office of the City Engineer, City Hall,
Cambridgeport, Dec. 13, 1880.

To the Honorable City Council:

Gentlemen, — As required by Section 8 of the Ordinance relating to City Engineering, a report is herewith presented of the operations and expenses of the Engineering Department, for the year ending Nov. 30, 1880.

Streets.

The following streets have been laid out and accepted, on the usual condition.

Streets Laid Out and Accepted.

Name.	From	To	When laid out.	Date of Plan.	By whom.	Length in Feet.
Acacia Street	Ash.....	Hawthorn	April 21, 1880.	March 22, 1880.	W. A. Mason & Son...	312.74
Amory Street....	Broadway ..	Summer	May 18, 1880.	May 17, 1878.	Arthur Hodges	519.00
Amory Street....	Summer	Hampshire.....	July 16, 1880.	May 17, 1878.	Arthur Hodges	507.67
Hawthorn Street .	Brattle	Mt. Auburn.....	April 21, 1880.	March 22, 1880.	W. A. Mason & Son...	627.44
Howard Street ...	River	Western Avenue..	April 21, 1880.	Oct. 1879.	Arthur Hodges	481.35
Meacham Street..	North Ave...	Somerville Line..	Nov. 2, 1880.	Sept. 10, 1880.	Chase & Bowker	413.00

No special improvements have been made in our streets or bridges which have required services of this department, beyond the usual number of lines and grades for curbs, and the monthly measurement of paving, etc.

The square at the junction of Main Street and Broadway has been thrown open to travel, graded, and an oval curbing placed around one of the trees near the easterly end. Here it is intended to place a watering-trough, the gift of Edward Kendall, Esq. Surveys, plans, and estimates of the quantity of gravel at the bank recently purchased of John E. Cassidy, at Watertown, have been made for the committee.

Bridges.

Nothing of importance beyond the usual repairs has been required on the bridges maintained by the city. The usual examination has been made. All are in good condition except Brookline Bridge; the caps and stringers of which are badly decayed. The bridge should be rebuilt some time during the coming year; it has just been covered with four-inch plank, and will probably wear out this covering. The housings of the trusses of the Walden Street Bridge are somewhat out of line, and should be straightened up.

Mill Pond.

The property known as the "Mill Pond," lying between River Street and Western Avenue, and Howard Street and the river, comprising some 7½ acres, has been purchased of E. W. Cutter, Esq. The bottom of this pond is very foul, and when bare (as it is twice in each day) the odors arising from it have caused much complaint from, and annoyance to, the people living in the vicinity. By this purchase the suits pending between the City *v.* Cutter, and Cutter *v.* City, are all settled, the consideration being the payment of $10,000 by the city to Cutter, who gives them a clear title to the premises. The pond will be kept full of water, and filled as soon as practicable with the ashes collected by the Street Department.

Sewers.

Sewers have been constructed as per details given in the following table: —

Sewers Constructed.

LOCATION.			CONSTRUCTION.						Total Cost.
Street.	From	To	Contractor.	Material.	Size in Inches.	Manholes.	Length in feet.	Inlets.	
Lawrence St. ..	Pearl	Niagara	Matthew Corkrey.	Portland Pipe..	12″	2	286.3	19	$188 75
Franklin St....	Hancock ..	Easterly.....	City Engineer....	Akron Pipe...	12″	.....	80.0	4	70 90
Buckingham St.	Craigie....	Concord Ave..	Samuel McCulloch.	Portland Pipe..	12″×10″	5	1196.2	81	1,155 39
Follen St.....	Northerly..	Angle	Timothy Murphy.	Akron Pipe...	10	1	147.0	10	162 51
						8	1709.5	114	$1,577 55

The repairs on sewers have been larger than for a number of years, the principal of which is the Jay Street sewer, referred to in the last report. This has been carefully rebuilt. When opened for repairs it proved to be fully as bad as represented; an additional pile and timber foundation was required, and the invert was supported by a backing composed mostly of brick from the old sewer. The total length taken up and rebuilt was 592 feet, and the total cost $4,900.73.

The Washington Street sewer, from Harrison Street to near Portland Street, has received extensive repairs; the covering stone was badly cracked and broken, so as to render it unsafe. Three hundred and seventy-one feet were stripped and re-covered with new stone from the city ledge; new manholes were constructed at Harrison and Portland Streets.

The sewer in Linden Street has also been in part taken up and relaid, and a manhole constructed near Harvard Street.

In the early part of the year an eight-horse portable engine was purchased of Kendall & Roberts for the use of the department, at a cost of $685.75; also a six-inch White & Clark centrifugal pump, at a cost of $139.34. The use of this engine and pump by the department, together with the time for which they have been let to other departments, has amounted (very nearly) to a sum equal to the purchase money.

Much complaint has been made by the residents living near the outlets of the Sydney and Front Street sewers, from the deposits which have accumulated in "Goff's Cove." To remedy this in part, a dam has been constructed at the culvert under the Boston and Albany Railroad, to retain the water in the cove and cover the deposits; this was only a partial relief. It is proposed to connect the Main and Front Street sewers near Columbia Street, and the Front Street sewer with the sewer in State Street, and close up the outlet into the cove, thus causing the sewage to be diverted into the Main Street sewer and finally discharged at the Binney Street outlet. If there had been sufficient funds, this would have been done this year.

Deposits have accumulated around the outlet of the Bridge Street sewer, and under the adjoining wharves. It is proposed to clean out these accumulations, for which an appropriation

was voted; but Somerville, which has a larger interest in the matter than we, while expressing a willingness to co-operate with us, through a lack of appropriation has referred it to the next government for early action. The matter should receive early attention.

The large flushing gates have been used with good results during the present year.

A new book, properly ruled and headed, has been prepared and a large amount of information relating to the sewers has been collated and entered therein, as required under the provisions of the ordinance passed last year. Assessments of sewers constructed have been laid on the new system, and but little dissatisfaction has been caused.

The contract for building catch-basins was awarded to Samuel McCulloch, at $54.49 each, the previous contract being $48.94. Nineteen basins have been built under these contracts.

The contract for cleaning catch-basins and manholes was awarded to John Horigan for $1,242. The balance paid to Cornelius O'Connor on his contract was $574, and to John Horigan $500, making a total of $1,074. Twenty-eight persons have been licensed to lay drains, and 170 permits have been issued to these parties to make entries into the public sewers. One person has been complained of for violation of the Sewer Ordinance, and was fined.

Extensive surveys have been made for the proposed marginal sewer along Alewife Brook, with a branch to Cider Mill and Richardson's Ponds, and profiles and detailed plans prepared, together with estimates of cost. This sewer is designed to intercept and remove the sewage from the city sewers, and Niles Brothers' slaughtering establishment, from which a large amount of filth is now discharged into the brook.

The Committee on Sewers, while recognizing the importance of the withdrawal of this sewage from the brook, feels that in view of the circumstances, and the magnitude of the work specially referred to it, it is best to report progress only, without recommendation as regards the main sewer, but offers an order recommending the construction of the branch sewer from Cider Mill and Richardson's Ponds.

As our population increases and our sewers are more fully

made use of, it becomes more necessary that greater care and attention should be given to the cleansing of them. More flushing will be necessary, instead of depending, as we have largely in the past, on heavy showers occurring at long intervals, as well shown in the present year of drought. It is hoped that in the coming year better arrangements will be made and more attention will be given to keeping the sewers clean. If the system of house cesspools is abolished as now contemplated by the Board of Health, a regular plan of flushing will be required.

The appropriations for sewers were: —

For Sewers (Construction)	$6,000 00	
Transferred from Health	20 00	
		$6,020 00
Expended for sewers, catch-basins, etc.	$3,308 01	
Transferred to Maintenance Account	2,700 00	
Total, including amount carried to Maintenance		6,008 01
Leaving a balance of		$11 99
For Sewers (Maintenance)	$8,000 00	
Transferred from Construction Account	2,700 00	
		$10,700 00
Expended for Jay Street sewer repairs	$4,900 00	
Washington Street sewer	554 46	
Linden Street	185 50	
Cleaning catch-basins and manholes	1,074 00	
Care and repair of sewers	2,795 15	
Engine, pump, and tools now on hand	1,045 29	
		10,554 46
Balance		$145 60

Water Works.

Much time was occupied, and numerous plans were prepared for use, in the extended hearings on the matter of annexation of a portion of the town of Belmont to the city of Cambridge, rendered necessary for the better protection of our water supply. After many protracted meetings the territory was annexed to Cambridge. It embraces some 570 acres, including about one half of Fresh Pond, and a large tract of meadows lying westerly from Alewife Brook. Objectionable occupations in this section having commenced, which were deemed to be dan-

gerous to our water supply, it was considered desirable to have municipal control over it.

Drainage has been furnished from the small pond on Fresh Pond Lane, owned by Dr. Keen, the overflow from which was into Fresh Pond. This being quite objectionable, consent was obtained from the owner to close the outlet. The closing of this outlet caused flowage of a considerable area, and objections were made by the lessee, and others who were also flooded; and it was thought advisable to remove it, which was done by laying a six-inch drain pipe down the lane to the Fitchburg Railroad, Watertown Branch, from which location it finally enters the sewer discharging into Alewife Brook: the whole expense was paid by the Water Works, including a plan showing the location of the new drain, cesspools, etc., furnished to Dr. Keen.

In view of the extended drought, the Water Board thought it best to make a connection with the pipes of the city of Boston (having obtained the consent of the Water Board of Boston), near the Cottage Farm bridge on Essex Street. Plans were at once made, and the work commenced on the siphon and bridge across Charles River, which was placed in charge of the City Engineer; while the necessary pipe connections from Putnam Avenue and Pleasant Street, *via* the avenue and Brookline Street, were laid by the Superintendent of the Water Works.

The bridge was about 750 feet in length, constructed in a thorough and substantial manner with oak piles and hard-pine top, on which the pipe was laid, and covered with a double sheathed housing, thus making a double air space all around the pipe to prevent freezing. The inverted siphon by which the draw-way of the bridge is crossed is a strong box $3\frac{1}{2} \times 4\frac{1}{2}$ feet outside, with upright arms 31 feet high, made of 12×14 inch sticks of hard pine, thoroughly bolted, braced, and strapped with iron straps, making an internal space of $2\frac{1}{2}$ feet square, in which the 16-inch pipe is laid, the space around the pipe being filled with concrete.

The siphon was constructed, the pipe laid in and filled with concrete, on the pipe bridge on the southerly side of the draw-way. When completed, a temporary bridge was built across the draw-way, the siphon placed on rollers and rolled over to

the position it was to occupy when lowered; from this bridge the siphon was raised by means of heavy blocks and falls attached to large shears set up at each end upon footings of piles specially driven for them, the rollers removed, and the siphon lowered to the bottom between the lines of piles on Saturday, Sept. 25, 1880, at 6 P. M. The river bottom being soft mud, a foundation had to be prepared, which was done by first removing about 500 yards of soft material to the hard bottom, 22 feet below low water, and refilling to the desired grade with gravel, requiring some 200 yards, this being carefully levelled off by a submarine diver. The dimensions of the siphon were as follows: Outside horizontal length between upright arms, 46 feet; inside, 39 feet; height of arms, 31 feet; size of outside, $3\frac{1}{2} \times 4\frac{1}{2}$ feet; size of inside, $2\frac{1}{2} \times 2\frac{1}{2}$ feet; size of pipe, 16 inches; total weight, about 60 tons.

The bridge and siphon work was done by Mr. John P. Perkins, from plans furnished by the City Engineer. The siphon was moved and lowered by Mr. Albert B. Low, of Boston; the diver was John B. Newcomb: all the work being under the supervision of the City Engineer. Acknowledgments are here made to Henry M. Wightman, Esq., City Engineer of Boston, for access to plans of similar structures already built in Boston, and advice in matters relating thereto. The pipe was laid, and connection made on the Boston side, by the superintendent of the eastern division Boston Water Works, the entire expense being paid by the Cambridge Water Works. The whole line is fitted with connections, gates, and blow-off pipes. The cost of the bridge and siphon was $10,375.93; pipe and laying, $10,-453.53: total, $20,829.46.

In view of the probability of an additional source of water supply becoming necessary, the Water Board requested the City Engineer to examine and report to them upon the feasibility of taking water from the Shawsheen River. This river rises in the towns of Lexington and Bedford, and flows in a general northerly direction through the towns of Lexington, Bedford, Billerica, Tewksbury, and Andover, and unites with the Merrimack River just below the city of Lawrence. It has a drainage area of 34 square miles, which is sparsely settled, quite free from contamination, and apparently not likely to be occu-

pied either by business or inhabitants for many years to come. With suitable storage basins the river will probably yield from 18,000,000 to 20,000,000 gallons per day; as this is a much larger quantity than Cambridge would require for many years to come, compensation might be made to the mills below, by the storage of water for use during the dry portions of the year. Two plans are submitted in the report: one to take water in the town of Billerica by erecting a dam near the old Middlesex canal, 25 feet high, raising the water about 20 feet, creating a storage reservoir of about 800 acres, and conveying the water in a 30-inch pipe, laid in part in the location of the canal and in part in the highways near it to the conduit connecting Little and Fresh Ponds. The distance by this line would be $13\frac{1}{2}$ miles, and the fall about 90 feet. By this plan, water would be delivered into Fresh Pond by gravitation, to be pumped as now for distribution.

The other plan is to take the water higher up the river in the town of Bedford, near Lowell Street, here erecting a dam 22 feet high, making a storage basin of about 200 acres in extent. In the immediate vicinity is "Indian Hill," where a reservoir could be built, at an elevation of 233 feet above tide water, the water pumped at this point and delivered directly to our distribution pipes; or in view of the small quantity required to supplement Fresh Pond, the building of the reservoir could be delayed for a number of years, and the water pumped over the intervening high ground to Fresh Pond. This would be necessary only a few months in each year, and the machinery would not need to be duplicated. The distance from this point would be ten miles, and the pipe could be laid almost the entire distance in the highways, thus avoiding land damages and rights of way. By vote of the City Council, on recommendation of the Water Board, the proper notice has been given that the city intends to ask the Legislature for the right to take water from the Shawsheen River.

Plans have been prepared for the construction of filter dams across the openings of the principal nooks of Fresh Pond, known as Ames's, Bright's, and Black's nooks; also for the extension of the Little Pond conduit across Black's nook. The purpose of these dams is to arrest and retain within these nooks

much of the floating matter and vegetation, which is carried by the winds into the pond and toward the pumping conduit, the prevailing winds being in that direction. The estimated cost for this work was $5,000, which was promptly voted by the City Council; but prospective land damages having arisen, the matter was again submitted by the Water Board, and failed to receive the approval of the City Council. This is an important work, and advantage should be taken of the low stage of the pond, when nearly all the material required for their construction can be taken from the exposed bed, or if considered more desirable, steps should be taken to remove the accumulations from the nooks.

A portable engine of 35 horse-power, built by Kendall & Roberts, and a 12″ discharge Heald & Sisco pump, have been placed on the shore of Fresh Pond near the gate-house of the pumping conduit; a sheet-piling flume constructed into the pond to supply the pump, and a delivery flume to the gate-house. Provision is made so that water can be drawn to grade 1.00, city base, or 8 feet below the top of the pumping conduit. A house has been constructed over the engine and pump, and everything is now in readiness and good working order to deliver water to the main pumps at the pumping station whenever it may become necessary. The strainer of the suction of one of the main pumps is now exposed, and the other but slightly covered. Gaugings have been made to determine the quantity of water received from the collecting basin and conduit from Little Pond. The reservoir coping wall, which was repaired with a backing of concrete last year, has shown no further signs of movement, and is now in good condition.

Perambulation of City and Town Lines.

Monuments have been set marking the lines of the newly annexed territory from Belmont, and, in accordance with the statute requiring the lines between cities and towns to be perambulated once in five years, the lines between Watertown, Belmont, Arlington, and Somerville, and the city of Cambridge, have been examined by the appointed committees, whose reports have been made.

Cemetery.

The usual demands for work at the cemetery have been met, in staking out lots, giving grades and lines for avenues, paths, lots, etc.

A new book is now being prepared, as suggested by Mr. Farwell, the superintendent, in which a more complete record of burials will be kept, together with diagrams of each new lot sold, and those now unoccupied, showing the location of each burial in the lot, with the name of the person buried.

Fire Escapes.

Early in the year an order was passed, directing the City Engineer to enforce the order relating to fire escapes. In compliance with that order over 100 buildings have been examined, and escapes have been put up, or buildings altered in conformity, so that it is believed that, so far as is known, all the buildings requiring such arrangements are now supplied, in a more or less perfect manner, except some of our school and public city buildings, which seem to me to require immediate attention.

There being, however, no available funds for this purpose, no action has been taken. It is my purpose to bring this matter to the notice of the incoming city government, in time for early attention and the appropriations necessary.

Office.

Work has been continued on the sectional maps for the assessors' use, which have, so far as completed, proved of great value. A large amount of miscellaneous work has been done for the various departments of the city. Five assistants have been employed.

The appropriation for this department was	$6,200 00
There has been expended, including the salary of the City Engineer, car fare, horse hire, pay of assistants, draughting materials, hardware, stone bounds, and setting same, the sum of	5,780 60
Leaving an unexpended balance of	$419 40

Respectfully submitted,

WM. S. BARBOUR,
City Engineer.

REPORT

OF THE

COMMISSIONER ON WEST BOSTON, CANAL, AND PRISON POINT BRIDGES

For 1880.

The Commissioner for West Boston, Canal, and Prison Point Bridges submits for himself and associate his Tenth Annual Report of matters pertaining to the West Boston and Canal Bridges, and his fifth annual report on Prison Point Bridge.

West Boston Bridge.

There have been no extensive repairs made on this bridge during the past year, and it is not anticipated that more than the ordinary repairs will be required during the coming year. The engine has been provided with a new boiler, and the machinery for running the draw put in thorough repair. The roadway and sidewalk pavements on the filled portion on the Cambridge side will have to be relaid, but in other respects the bridge and appurtenant structures are in good order.

Canal or Craigie's Bridge.

This structure is in about the same condition as last year. It has required only the necessary repairs due to wear, and is now in good condition.

The annual statement of Superintendent Smith, showing the amount and kind of freight carried by vessels to points on the river above this bridge, will be found appended.

Prison Point Bridge.

The Commissioners have for the past two years called attention to the importance of paving the approach to this bridge on the Cambridge side. The travel over the bridge will be largely increased by the improvements now being made in its immediate vicinity by the Fitchburg Railroad Company, and the Commissioners would again urge upon the city authorities of Cambridge the desirability of substituting a stone block pavement for the present macadam surface on this approach.

The Fitchburg Railroad Company has, under an act of the Legislature and by license of the Harbor Commissioners, utilized the space between the draw pier and the Eastern Railroad at the Charlestown end of the bridge, for a driveway to its freight yards. The work has been done without any more interference than was unavoidable with the structures in charge of the Commissioners.

No very large outlay has been made for repairs during the past year, and the bridge is in good order.

Superintendent Story has kept an account of the amount and kind of freight which has passed through the draw of this bridge, and it will be found appended; also a statement of the number of teams crossing the bridge during three days of one week in November, showing the large amount of team travel over this bridge.

NUMBER OF TIMES THE DRAW IN WEST BOSTON BRIDGE HAS BEEN OPENED DURING THE YEAR.

December, 1879	76
January, 1880	30
February, 1880	4
March, 1880	53
April, 1880	109
May, 1880	186
June, 1880	266
July, 1880	175
August, 1880	189
September, 1880	214
October, 1880	175
November, 1880	153
Total for the year	1,630

CHARLES W. BLANEY, *Superintendent.*

NUMBER OF TIMES THE DRAW IN CANAL BRIDGE HAS BEEN OPENED DURING THE YEAR.

December, 1879	234
January, 1880	132
February, 1880	264
March, 1880	394
April, 1880	398
May, 1880	522
June, 1880	444
July, 1880	446
August, 1880	454
September, 1880	412
October, 1880	258
November, 1880	398
Total for the year	4,358

A. W. SMITH, *Superintendent.*

STATEMENT OF THE AMOUNT AND KIND OF FREIGHT WHICH PASSED THROUGH CANAL BRIDGE DURING THE YEAR ENDING DEC. 1, 1880.

Coal	151,109 tons.
Gravel	18,872 tons.
Stone	15,517 tons.
Ice	532 tons.
Hay	467 tons.
Iron	150 tons.
Lumber	15,363,000 feet B. M.
Brick	1,864,000
Piles	12,131 pieces.
Posts	11,175 pieces.
Ties	1,400 pieces.
Wood	7,003 cords.
Potatoes, etc.	1,570 bushels.
Fish	100 barrels.

NUMBER OF TIMES THE DRAW IN PRISON POINT BRIDGE HAS BEEN OPENED DURING THE YEAR.

	Openings.	Vessels.
December, 1879	58	76
January, 1880	21	30
February, 1880	8	12
March, 1880	6	6
April, 1880	10	10

May, 1880	18	18
June, 1880	26	28
July, 1880	58	61
August, 1880	70	83
September, 1880	50	56
October, 1880	67	79
November, 1880	88	119
Total for the year	480	578

NATHANIEL E. STORY, *Superintendent.*

STATEMENT OF THE AMOUNT AND KIND OF FREIGHT WHICH PASSED THROUGH PRISON POINT BRIDGE DURING THE YEAR ENDING DEC. 1, 1880.

Lumber	4,766,000 feet B. M.
Shingles	740,000
Coal	51,067 tons.
Wood	1,750 cords.
Lime	1,591 barrels.
Posts	402 pieces.
Sand	330 tons.

November, 1880.	Number of teams of all kinds crossing the bridge in one day, between the hours of 6 A. M. and 6 P. M.	1,752
	Number of teams in three days of the same week	4,962

The expenses of the city of Cambridge for the care and maintenance of West Boston, Canal, and Prison Point Bridges for the year were as follows: —

Amount of appropriation		$6,000
Superintendents' salaries	$2,079 40	
Commissioners' salaries	499 99	
Civil engineers' salaries	75 00	
General repairs, lumber, and paving	1,067 57	
Fuel, gas, oil, and water rates	1,020 93	
Sweeping, cleaning, and watering bridges	450 68	
Iron work, hardware, and tools	215 08	
New boiler and fittings	146 61	
Small supplies, etc.	7 75	
Total expenses		5,563 01
Balance		$436 99
Receipts for wharfage, etc.		78 92
Balance, Nov. 30, 1880		$515 91

ANNUAL REPORT

OF THE

TRUSTEES OF THE CAMBRIDGE PUBLIC LIBRARY.

The Trustees of the Cambridge Public Library submit to the City Council their Second Annual Report, under their present title, and the twenty-third since the foundation of the library in 1858 as the Dana Library.

The business of the library for the year about to close has progressed successfully. Nothing has occurred to disturb the usual harmony of its operations. The public appears to be satisfied with the provision here made to promote its improvement and gratification. We can perceive an enlarged interest among our readers, by the frequent requests that are made to furnish works of a varied character, which do not come within that class usually denominated *popular books;* such as those of a political, scientific, historical, or artistic character, of an advanced grade, that would naturally be sought by thoughtful people. The liberality of the City Council in allowing for the support of the library all that the Trustees have requested — and they have asked for as much as they thought could be judiciously applied — is fully appreciated by the Board and the public.

The most noteworthy event of the year was the amendment of the ordinance founding the library, essentially changing its government by the enlargement of the Board of Trustees, making an addition of two citizens at large. This change seemed necessary on account of the great increase of readers in recent years, the general growth of the outlying parts of the city, and the propriety of forming a board sufficiently numer-

ous to permit all sections of the city to be represented upon it. We anticipate that when the new management is inaugurated and gets into practical operation, much advantage will result.

By the original ordinance — that of 1858 — the Board of Trustees was made to consist of the Mayor, who was chairman and a member, by virtue of his office; one member of the Board of Aldermen, and one member of the Common Council, elected annually by the City Council in convention; and three citizens at large, the official term of each of the latter being three years. These were so arranged that the term of one would expire in each year, and his successor be chosen at the same time and in the same manner as the representatives of the City Council. By the Board thus constituted the affairs of the library have been administered for twenty-three years. During the larger portion of these years its increase in books was small, and its readers extremely few. This was owing perhaps in some measure to the fact that its use was limited to a few hundred who resided in the immediate vicinity of the room where the library was kept. Subscribers were required to pay one dollar a year each for the privilege of taking books, and hence this restriction practically defeated the object of the library; and instead of one that the public could enjoy, the public had but little benefit, for it hardly knew of the existence of the institution. In the early years the room was open for the delivery of books one afternoon in each week; later on, two afternoons; and still later, three days in the week were given to its business. This brings our history down to the year 1874, when the Board of Trustees abolished the admission fee of one dollar, and directed that the rooms be opened daily, from two till eight o'clock in the afternoon. From this action of the Board it may truly be said that the real life of the library began, and its progress since has been highly satisfactory. Compare for a moment the condition when a fee was required, and the present state. In 1873 — the last year that the fee was exacted — the amount received was $310. From the beginning of the year 1875 to the close of this library year, the names of 14,579 persons have been registered; of these nearly 7,000 have been received during the last two years. In 1873, the issues for the year were

12,566 volumes; in 1880 the number was 83,184. In the year 1873, the number of volumes in the library was 6,672, a large portion of these being a donation at the start; now the number is 12,812. It is true that the expense of maintenance has increased; but it has been small compared with the enlarged demand made upon the library. In 1873, $3,000 were expended for the benefit of about three hundred readers; in 1880, $6,000 met the wants of more than twenty times that number.

We feel justified in calling the attention of the city government to this brief retrospect; because, with the present year, the Board, as it is now constituted, will cease to exist.

The amended ordinance, to which reference has already been made, relieves the Mayor from all connection with the library. The reasons which led the Committee on Ordinances to recommend this course were chiefly that that officer was required to give daily attention to a great variety of matters connected with the legislation of the city, and the administration of its many departments centred at the City Hall; while his duty as chairman of this Board was such that his attendance could be dispensed with without detriment to the public service, it being almost wholly that of presiding at its meetings. Lest it should be thought that the action of the committee was derogatory to the chief magistrate of the city, we may mention that the change was entirely acceptable to the present Mayor, — indeed, he first made the suggestion in an official form, — and it has met the approbation of several of his predecessors.

The Board in future will consist of one member of the Board of Aldermen and one from the Common Council, as heretofore; and *five* citizens at large, whose term of service will be for five years. At their election in January next, their term of office will be decided by lot, so that thereafter one vacancy will occur and be filled each year. The new Board will choose a chairman from its own number, and such other officers as may be found necessary. It has our best wishes, that from its advent to these places may be dated a new era in the prosperity of the library, whose influence as a power for good in the community, through their exertions, we hope will be increased a hundred-fold. We have spoken thus at length of

the change in the constitution of the Board of Trustees, because it is a part of the history of the library, and should have a permanent place in the archives of the city.

There is, perhaps, no part of the duty of the managers of public libraries more responsible than the selection of books. Certainly there is none that has been more amply enlarged upon and discussed. As we are about to retire from office, we deem it proper to state the rule that has governed us in this, the most important and delicate service our office has required. To discriminate between what should be received and what rejected is, at times, a question of great difficulty. When we consider, what all experience proves, that a very large majority of readers require only to be amused and entertained, to what extent this propensity should be indulged is somewhat embarrassing to decide. The love of fictional writings is so strong a characteristic, not only of our own community, but of all which are considered intelligent, that it should be made, if possible, beneficial to those who pursue it. The subject is attracting renewed attention from those interested in public libraries, not in this country alone, but in Great Britain and the Continent of Europe. A recent writer tells us that the position which fiction holds in the regard of the reading public is clearly shown by the tabulation of the reports of more than twenty public libraries, which show that sixty-eight per cent, or a little upwards of two thirds, of the books taken out were novels. The Boston library, with its 370,000 volumes, reports that two thirds of its issues are of this sort, and that the ratio of historical and other standard works is to the sensational and transient, as thirteen to forty; or in other words, that three fourths of its reading is of the vapid class of literature. Now all this reading, some contend, if not vicious, is certainly not improving; but there are those who maintain that it is a gain to the community to have this great class of readers devoting to novel-reading the time which might be employed in a manner more dangerous in its results. This principle may be unsound; and if so, where shall we find a substitute that is not more perilous? Of course such indiscriminate reading is to be deplored, but what shall we employ as a remedy? Our librarian, in her report to the Trustees, calls their attention renewedly

to the subject. She says: "Children allowed by their parents to read anything and everything will always use the public library too much. Many of our young readers draw six books a week; that is, one each day. These are of course skimmed, not read in any proper sense of the word. With the exception of this class of readers, the patrons of the library generally use their privileges wisely and profitably." In former reports we have called attention to the subject; but we find ourselves helpless. As Trustees we can do nothing. It is only by the mutual efforts of parents and teachers that any improvement can be effected.

We have allowed nothing to be placed upon our shelves that might be considered of a doubtful character. In selecting books, we have pursued this course uniformly, — to require that all works of which we had no positive knowledge should be read by one of the Trustees, or by either of the intelligent persons connected with the library, or in the family of a Trustee. In this way, we have succeeded in keeping out everything of an immoral or otherwise objectionable character; and we have reason to believe that our course has been successful, and that the library is comparatively pure and clean. The librarian observes, in her report before alluded to, that, as evidence that the books added to the library in years past have been properly chosen, it is very seldom that any meritorious work is called for that we have not; and when any desirable book is sought that is not on our catalogue, the title is handed to the library committee, and it is at once obtained, unless it be of too technical a character for popular use.

The love of fictitious writings is a confirmed trait among intelligent readers, that is almost universal. It cannot be eradicated. Those who read books at all, indulge more or less in fiction. The practice pervades all classes; the most distinguished in professional life, as well as those whose time is devoted to manual labor. Charles Reade avows the opinion that the "only worthy end of fiction is to correct social and national abuses." Sir John Herschel declares his conviction that the novel is "one of the most powerful engines of civilization ever invented." Canon Farrar recommends clergymen to read good novels; a famous Oxford lecturer advises students

for the Christian ministry to peruse romances carefully, in order to "enlarge their ideas and give them social graces"; and Dr. Draper claims "that the printing-press has superseded the pulpit." *

We do not refer to these opinions for the purpose of justifying them, but simply to show the similarity of sentiment that prevails among men eminent in different departments of literary work; and that, in consequence, it is incumbent upon all who are called upon to make selections for public libraries to exercise the utmost care in performing their duty. In our selections for this library, we have gratified the popular taste to the extent previously mentioned in this report. Our efforts, we feel assured, have not been productive of harm either to the morals or the minds of our readers. Every year's experience has confirmed us in the view that the course pursued has been correct. If we have erred, we can only say, in retiring from these places, that we hope our successors may find a "more excellent way."

The operations of the library for the year ending Nov. 30, 1880, are here given.

Books Issued.

First quarter	24,563
Second quarter	21,530
Third quarter	17,233
Fourth quarter	19,858
Total	83,184
Number issued in 1879	87,277
Decrease in 1880	4,093
Average per day	271
Largest issue for any month (January)	9,060
Largest issue for any day (Jan. 10)	630

Accessions.

By purchase, 803; replaced, 307; total	1,110
By gift	62
In exchange for History of Cambridge	13
Total	878
Number of books in the library at the close of 1879	11,934
Total now in the library	12,812

* M. F. Sweetser in "Hints for Home Reading," page 9.

Miscellaneous.

Number of books lost	8
Number of books re-covered (with paper)	7,933
Number of books replaced (worn out)	307
Number of postals sent for books overdue	2,375

Descrip ion of Books added to Library.

Biography	86
Essays, sermons, etc.	142
Fiction and juveniles	238
History	54
Poetry and drama	27
Science and art	80
Travels	70
Reference library	23
Periodicals, public documents, etc.	158
	878

Donors.

State of Massachusetts	6	City of Cambridge	1
United States	10	Newton Public Library	1
Cobden Club	2	Hon. J. M. W. Hall	1
J. F. Marin	7	Hon. W. Claflin	9
Mrs. T. P. James	1	Hon. Geo. P. Carter	1
S. H. Sanborn	21	Unknown	2
		Total	62

Reading Room.

Number of visitors during the year	14,542
Daily average	46
Increase over last year	635

Paige's History of Cambridge.

Number in hands of Trustees at last report		137
Granted Mayor Hall, 1; granted to Board of Health, 1	2	
Number exchanged for "works of similar character"	9	
	—	11
Number now in custody of Trustees		126

The Fay Legacy.

This legacy remains as at the time of our last report, — invested in the city's note. The income — sixty dollars — has been expended in the manner ordered by Mr. Fay, in his will. The principal sum is *one thousand dollars.*

Receipts.

From sale of catalogues and waste paper	$25 00
From fines	127 79
	$152 79

All of the above has been paid into the city treasury, as the ordinance requires.

Expenses.

Salaries, — Librarian, assistants, superintendent of reading-room, janitor, helpers (transient and permanent)	$2,420 70
Rent of library rooms	1,000 00
Books, periodicals, and newspapers	1,381 67
Gas, $302.38; water, $9; ice, $15	326 38
Printing and stationery	418 67
Binding and repairs of books	312 50
Floor matting, $51.14; framing Atlantic portraits (presented in sheets), $12.50	63 64
Librarian, petty supplies	28 54
Sundry repairs by carpenter, gas-fitter, glazier, painter, etc.	47 67
	$5,999 77
Amount of appropriation	6,000 00
Unexpended	23

Since the library came into the possession of the city — nearly twenty-three years — the total of appropriations amounts to $54,236.75. Of this sum, $18,180.74 has been expended for books.

In closing we repeat the request of last year, that the allowance for the coming year may be the same, namely, *six thousand dollars*.

Respectfully submitted,

JAMES M. W. HALL,
JOHN S. MARCH,
M. G. HOWE,
H. B. GOODWIN,
EDWARD P. TUCKER,
ISAAC A. NAY,
Trustees.

REPORT

OF THE

TRUSTEES OF THE DOWSE INSTITUTE.

To the Honorable City Council of the City of Cambridge:

The Board of Trustees of the Dowse Institute respectfully transmits herewith an attested copy of the annual report of its treasurer, which contains an exact account of the receipts and expenditures for the year 1879–80.

The course last season was given in Union Hall, and consisted of lectures by Hon. S. S. Cox, Professor W. H. Niles, Professor R. A. Proctor, Hon. William Parsons, Mr. R. J. DeCordova, Mrs. Mary A. Livermore, Professor E. S. Morse, and Wendell Phillips, Esq., and music by the Mendelssohn Quintette Club, Mr. J. Levy, and the Schubert Quartette, and readings by Mr. J. J. Hayes.

Respectfully submitted,

JAS. M. W. HALL,
W. W. WELLINGTON,
W. A. BULLARD,
FRANK A. ALLEN,
CHARLES WALKER,
} *Trustees.*

REPORT

OF THE

TRUSTEES OF THE BRIDGE CHARITABLE FUND.

The Board of Trustees in charge of this fund herewith presents the Fourth Annual Report in relation thereto.

The amount of the fund, including interest as of Jan. 19, 1881, has reached the sum of $2,054.29, the same being on deposit at the Cambridgeport Savings Bank.

As the fund is now in excess of $2,000, it will hereafter be productive of an annually increasing benefit to the city. It will be remembered that by the terms of the instrument under which the city accepted the original donation of Levi Bridge, it is required that when the amount of the fund shall have reached the latter sum named herein, two thirds of the interest thereafter accruing "shall be paid over to the Overseers of the Poor, and the remaining one third added to the principal forever." It will therefore be incumbent upon the next Board of Trustees to draw the fractional part of the interest designated, and pay the same in accordance with the intent of the donor.

The Trustees for 1880, having had little else to do than to watch the slow growth of the fund, add their wish to that of their predecessors, that the benevolent intentions of the donor may be encouraged by other generous gifts to the same object, so that future boards may find satisfaction in disbursing the interest thereof, for the benefit of the poor of our city.

JAMES M. W. HALL,
CHARLES WALKER,
GEO. D. CHAMBERLAIN,
} *Trustees.*

REPORT

OF THE

TRUSTEES OF THE SANDERS TEMPERANCE FUND.

To the Honorable City Council:

The Board of Trustees of the Sanders Temperance Fund, in presenting its Sixteenth Annual Report, has little to add to what has been repeated year by year in the reports of the past.

It is now more than sixteen years since, upon the decease of a former eminent and wealthy citizen of Cambridge, Charles Sanders, Esq., the bequest was made to our city of the sum of $10,000, to be established as a trust fund, the interest of which was to be paid as a salary to a missionary who should labor for the promotion of temperance. So far as the board has knowledge of the facts, the letter of the will of Mr. Sanders has been complied with by the Trustees of the fund in past years, and year after year a missionary has been duly appointed, and according to his own methods he has doubtless faithfully performed the duties required. The Trustees of the fund could, however, have had little knowledge of the results of his labors, or whether indeed they were productive of any good at all.

The members of the present board, in accepting the positions thereon to which they were assigned by the courtesy of the City Council, had no desire to be simply the nominal custodians of a fund established for a philanthropic purpose. They therefore sought to acquaint themselves with the methods employed by the agent or missionary, and to make a general inquiry as to the extent and value of the work as heretofore

performed by him. This board has satisfied itself that great good can be accomplished through this agency, and that the one who has undertaken the duty is earnestly devoted to it. As a result of the inquiries into the matter by this board, an endeavor has been made to organize the work of the missionary, by giving him rules for his guidance and fixing an office hour at the City Hall, between 2 and 3 o'clock P. M., each day, during which time he may receive applications for counsel or assistance from such as may need the service.

Mr. Alonzo Stewart, mentioned in previous reports of the board as an earnest temperance reformer, having acceptably filled the position of missionary for many years, has been continued by this board for the term ending April, 1881. The sum of $600 per year is paid to him as salary, it being the interest upon the fund.

His annual report is annexed hereto.

JAMES M. W. HALL,
NATHAN G. GOOCH,
CHARLES WALKER,
JOHN CONLAN,
GEORGE A. DAVIS,
Trustees of Sanders Temperance Fund.

REPORT

OF THE

SANDERS TEMPERANCE FUND MISSIONARY.

To the Trustees of the Sanders Temperance Fund:

GENTLEMEN, — The ending of another year brings us face to face with the results and responsibilities of the positions we have each occupied. To myself the review is anything but satisfactory, there has been so much that ought to have been done, and so very little accomplished. This regret is intensified by the thought that my work has to do with the present and future well-being and happiness of my brother man. Trusting that these reflections will stimulate to more earnest efforts in the future than in the past, I herewith present, with my daily journal, a condensed report of the mission work performed by me during the past year. The line of work has been like that pursued in former years. The evils of intemperance are much the same under all conditions and upon all persons, and must be met in the same way. In accordance with the conditions of the benevolent bequest under which I am employed, my whole time has been devoted to the accomplishment of the object sought, — the reform of the drunkard, and preventing others from entering the drunkard's road. With this object in view I have made direct personal appeals to eight hundred and twenty-two persons, whose names I have on record, and who were more or less addicted to the use of intoxicating drinks. I have taken pledges of total abstinence from all intoxicating drinks from one hundred and twenty unfortunate men and women brought before the court for intemperance, and have visited the House of Correction every Sunday

morning, conducting religious and Sunday-school services in the female department. I have collected and distributed 26,857 pages of temperance and religious literature, and have attended, on an average, more than three temperance meetings each week. I have corresponded with most of the clergymen and temperance workers of Cambridge, and have endeavored faithfully to comply with your directions by being at the Police Court and at my office at the appointed time, and in readiness to assist any one desirous of leading a better life. Many before the court for intoxication have, with the approval of the judge, been taken on probation for such time as he should appoint; in most cases it has apparently been the best course, especially for those who had families dependent upon them for support. I fully agree with the Chief of Police in his expressed opinion that the law passed by the last Legislature, apparently in favor of the inebriate and his family, has not operated in our city as was anticipated. The "drunk" that costs but one dollar has the same degrading and demoralizing effect upon the drunkard, and brings the same sorrow and destitution upon his family, as if the cost was ten dollars. His dollar is often furnished by the rum-seller, so that he can the sooner return to his old haunts and drinking habits. This, like most laws passed to regulate and control the sale and use of intoxicating drink, the rum-sellers have been able to turn to their own advantage and profit.

Respectfully submitted,

ALONZO STEWART,

Temperance Missionary.

DECEMBER 31, 1880.

REPORT

OF THE

COMMITTEE ON SOLDIERS' AID.

In Board of Aldermen, Dec. 29, 1880.

The Committee on Soldiers' Aid submits to the City Council its Report for the year ending Nov. 30, 1880.

The amount paid as regular State aid was	$13,060 25
The amount paid to indigent soldiers and sailors was . . .	5,003 14
The amount paid to the agent employed in the examination of settlements, etc., was	366 30
Total	$18,429 69
The amount received from the Commonwealth was . . .	$15,632 47

There are now upon the State Aid list 218 persons, and upon the list of Indigent Soldiers and Sailors, 56.

All of which is respectfully submitted.

E. T. NICHOLS,
HENRY H. GILMORE,
MICHAEL CORCORAN,
} *Committee on Soldiers' Aid.*

REPORT

OF THE

CAMBRIDGE WATER BOARD.

To the Honorable City Council of the City of Cambridge:

The Cambridge Water Board herewith submits to you its Sixteenth Annual Report, in accordance with the city ordinance.

Total Cost of the Works.

Cost of the Water Works, Nov. 30, 1879, as per last year's report	$1,696,596 50
Expended on construction during the year ending Nov. 30, 1880	25,234 04
Total expenditure	$1,721,830 54

Net Cost of the Water Works.

Total cost as above stated	$1,721,830 54
Less amount of the water loan paid from the water debt sinking fund to Nov. 30, 1880	186,400 00
Leaving unpaid water debt	$1,535,430 54
Deduct from this the value of the water loan sinking fund, as shown by the Trustees' account	414,568 48
Showing the net cost of the works Nov. 30, 1880	$1,120,862 06

Statement showing in brief the transactions on account of the Water Works for the year ending Nov. 30, 1880: —

Received.

Appropriation for construction account		$30,000 00
From water rates	$174,739 12	
Less water rates refunded	1,413 63	
		173,325 49
Shutting off and letting on water, and fines		879 47
Rent of house		144 00
From supply account		3,762 52
		$208,111 48

Expended.

For construction account	$25,234 04
For maintenance account	25,865 49
For supply account	1,995 21
Interest on water debt	91,585 00
Paid into the sinking fund	45,855 00
Unexpended appropriation	4,765 96
Balance showing gain in 1880	12,810 78
	$208,111 48

Comparative Receipts.

Water rates for the year ending Nov. 30, 1880	$173,325 49
Water rates for the year ending Nov. 30, 1879	164,681 90
Showing gain in 1880	$8,643 59
The above increase was made after a reduction had been made during the year in the water rates of	$16,585 50
Deduct additional sum allowed on hydrants	11,210 00
Showing net loss by reducing the water rates	$5,375 50
Add the gain in receipts as stated above	8,643 59
Showing the real comparative gain to have been in 1880	$14,019 09

Water Bond Account.

Whole amount of water bonds issued	$1,714,900 00
Less amount paid from sinking fund	186,400 00
Leaving the amount of unpaid water bonds	$1,528,500 00
Total cost of works as herein shown	$1,721,830 54
Less amount paid from sinking fund	186,400 00
Showing the unpaid cost of the water works	$1,535,430 54

Deduct the amount of unpaid water bonds	$1,528,500 00
And the unpaid cost of the water works exceeds the unpaid water bonds by the sum of	$6,930 54
This is because the amount expended this year, for which no bonds were issued, is in excess of the amount due the water works, reported last year as balances lapsed into the city treasury from receipts from sale of water bonds, being	$25,234 04
Amount reported last year	18,303 50
Difference as above	$6,930 54

By the terms of our charter, Acts 1865, Chap. 153, Sect. 8, it is provided in reference to the "Cambridge Water Loan," that "the net surplus, income, and receipts, after deducting all expenses and charges for distribution, shall be set apart as a sinking fund, and applied only to the payment of the principal and interest of said loan." This requirement was certainly in force until 1875, when the Legislature in Acts 1875, Chap. 145, Sect. 2, required that thereafter, not less than three per cent of the amount of the water debt should be carried annually to the sinking fund.*

There is a large sum which should be carried to the sinking fund of the water loan, as shown in the registrar's account, made up from the balances of receipts which have lapsed into the city treasury, instead of being added to the sinking fund.

The registrar has gone over these accounts the past year in detail, and the result of his examination shows that there is due the water loan sinking fund, including the balance of interest, the sum of $148,030.08. We would suggest that you appoint the city auditor or a committee to examine the registrar's account, or otherwise examine the subject, to the end that the requirements of the Legislature be complied with, and the sinking fund appear as it should in the city accounts.

As our sinking fund was based upon six per cent interest, and that rate cannot be realized, we would further suggest to you the propriety of adding to the sinking fund any surplus over the three per cent required, as a set-off for this loss in interest.

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* See Registrar's Report, *post*.

Comparative Rainfall and Height of Water in the Pond.

MONTHS.	Rainfall.			Below high-water mark.		
	1878.	1879.	1880.	1878.	1879.	1880.
	Inches.	Inches.	Inches.	Feet.	Feet.	Feet.
December, 1879.....	0.84	4.39	3.76	2.20	2.15	4.87
January, 1880.....	5.84	2.20	2.62	2.00	2.25	4.87
February, "	6.59	3.43	3.49	1 66	2.92	4 60
March, "	4.17	4.02	2.85	0.75	2 72	4.14
April, "	5.15	5.65	1 94	0.68	1.62	3.90
May, "	0.87	1.28	1.44	0.75	1.50	4.44
June, "	2.68	4.59	0.73	1.42	1.79	5.38
July, "	4.82	2.64	6.49	2.29	2 27	6.29
August, "	6 21	5.79	3.48	2.27	2.79	6.79
September, "	2.24	1.71	1.63	2.63	3.11	7.46
October, "	5.06	0.76	2.63	3.08	3.97	8.03
November, "	6 52	3.18	2.25	3.00	4.58	8.33
Total.....	50.99	39.64	33.31	Av. 1.89	Av. 2.64	Av. 5.76

It will be seen that we had 6.33 inches less rainfall in 1880 than in 1879, and 17.68 inches less than in 1878, and as a result we have 3.75 feet less water in the pond than at the close of last year. As the amount of water pumped in 1880 was not as much as in 1879, this difference in the height of water must be accounted for by the lack of rainfall the past two years, the average rainfall for this region being about 49.5 inches.

The engineer's report shows that we pumped in 1880, 886,-898,400 gallons, being 922,500 gallons less than the amount pumped in 1879. The amount of coal used in 1880 was 1,618,800 pounds, being 96,400 pounds less than the amount used in 1879.

Great efforts have been made during the past year to ascertain and stop all leaks and waste of the water; and to show that these efforts have not been without good results, we note that while the amount pumped has been nearly a million gallons less than last year, we have at the same time sold by meter more than 20,000,000 gallons more than last year, put in 139 new supplies, and supplied many houses with water that were

not occupied last year. We think this result is largely due to the system of night inspection used by the superintendent; as by shutting off from time to time different sections of the city, he can, by the aid of the chronograph at the reservoir, ascertain where leaks exist or waste occurs, and remedy the same.

It is interesting to observe the difference in the height of water in Fresh, Little, and Spy Ponds. In August, we find Fresh Pond 4.35 feet lower than Little Pond, 4.76 feet lower than Spy Pond, and 3.98 feet lower than the water on the meadows. In October, the difference had increased so that Fresh Pond was 4.67 feet lower than Little Pond, 5.54 feet lower than Spy Pond, and 4.86 feet lower than the water on the meadows, showing conclusively that there is but little if any natural underground connection between these ponds.

The ordinance by which the Water Board was created, requires it to furnish to the City Council annually "a statement of the condition of all the Water Works, . . . together with any information or suggestions which it may deem important."

This seems to us a wise provision; for we know that the City Council changes more or less every year, and in the nature of things, rarely does any one remain a member of the City Council long enough, or examine the subject with the care necessary to become acquainted with the condition, wants, or necessities of this most important part of the city property, — one that probably is more intimately connected with the welfare of our citizens than any other, coming as it does into personal contact with nearly all of them every day.

We shall in this report present to you the "Conclusions" of the "Water Supply Committee" appointed by you, and the experts employed by them, as their report was not made in time for our last year's report. This committee was appointed about two years ago to examine the whole subject of water supply, purity of the water, etc., with authority to employ such expert talent as they might deem best. They called to their assistance Mr. E. S. Chesbrough, of Chicago, and Professor E. S. Wood, of Cambridge, both of whom stand at the head of their professions.

We wish here to call your special attention to the "Conclu-

sions" they then reached, feeling assured that at present there is no question which so deeply concerns the welfare of our citizens as the providing of an adequate supply of pure water for our present and future use.

Your committee close their report by making the following recommendations: —

"*First.* That Alewife Brook should, if possible, be restored to purity by withdrawing from it the sewage of Cambridge, and the very offensive matter from the hog-slaughtering house of Niles Brothers; that this relief to the brook can be obtained more advantageously to the city by means of a sewer along the right bank of the stream from North Avenue to Concord Turnpike, and thence to Charles River, as recommended in a report of the City Engineer.

"*Second.* That a branch drain, connecting with the sewer already described, be constructed to receive the overflow of Richardson's Pond and of Cider Mill Pond.

"*Third.* That the city obtain control by annexation of the territory marked out on the accompanying map" (being the land around the pond since annexed to Cambridge from Belmont).

"*Fourth.* That the waters of Spy Pond, Little Pond and Filter Basin, and of Wellington Brook, except under conditions above set forth, be not admitted to Fresh Pond." (The "conditions" referred to are when the snow melts or rain comes off from frozen ground, and the water is comparatively pure.)

This report, with the above conclusions, was reached after a year's labor and research, and is signed by Samuel L. Montague, George S. Saunders, George P. Carter, John W. Hammond, Henry P. Walcott, and William S. Barbour.

The experts who were employed by the committee made separate reports, summing up with their "Conclusions," to which we now invite your attention.

Professor E. S. Wood says: "The careful survey of Fresh Pond and vicinity, and the study of the Cambridge water supply, in regard to which I have endeavored to give the principal facts in the foregoing pages, have led me to the following conclusions: —

"*First.* That Fresh Pond alone cannot be relied upon

to furnish a sufficient supply of water for the city of Cambridge.

"*Second.* That there are certain sources of contamination which are liable to pollute the waters of Fresh Pond to an extent dangerous to the health of the community, and which must be removed in order to preserve the purity of Fresh Pond water.

"*Third.* That the principal sources of pollution of Fresh Pond itself can be diverted. The sewage discharging into the pond at Cushing Street, and that into Alewife Brook and Black's Nook, can be conducted away from the pond by means of sewers.

"*Fourth.* That in order to still further preserve the purity of Fresh Pond, the city authorities should exercise constant supervision over Fresh Pond Hotel and its adjoining grounds, and the Fresh Pond meadows, and prevent upon this territory the carrying on of any business, or the erection of any buildings, the refuse of which would tend to injure in any way a source of water supply. And if the city has not this power vested in its Board of Health or other board, it should obtain it, if possible, from the Legislature.

"*Fifth.* That the water of Little Pond and Wellington Brook is at times polluted to so great an extent, and with material of so dangerous a character, that these waters are totally unfit to be used as sources of water supply; and since this pollution is of such a nature as to render it impossible to prevent it from entering these waters, their use should be discontinued, and they should be prevented from entering Fresh Pond.

"*Sixth.* That some other additional supply should be obtained.

"*Seventh.* That if the above-mentioned sources of pollution of Fresh Pond be removed, the purity of its water may be sufficiently preserved to render it suitable to be used as a source of water supply for an indefinite period, and also as a storage reservoir, if necessary, for any other additional supply."

Mr. E. S. Chesbrough, than whom there is no higher authority in this country in matters of water supply, closes his report as follows: —

"My examination of this subject leads me to the following conclusions: —

"*First.* There is satisfactory evidence to show that up to the present time the supply from Fresh Pond has been sufficiently pure.

"*Second.* Comparatively cheap expedients may be adopted to maintain its present purity, under existing conditions in regard to population and industries.

"*Third.* That to provide against future probabilities, it will be necessary to take constantly into Fresh Pond sources of supply now admitted to but a limited extent, because not sufficiently pure; or,

"*Fourth.* It will, I believe, be found best ultimately to abandon the effort to make and keep all the present available sources of supply pure, on account of great expense and impracticability, and for an additional supply to take a part of the Shawsheen River, or go to the city of Boston."

We think the conclusions which were arrived at by the committee and experts can be reduced to two, which in the main cover their recommendations, so far as deciding the question, "What had we better do?" to wit: —

"*First.* That immediate steps should be taken to prevent the contaminating nuisances which now flow into the pond.

"*Second.* That Fresh Pond alone cannot be relied upon to supply water for the city of Cambridge, and that some additional supply should be obtained."

Purity of our Water.

In regard to the first point, of protecting our pond from sewage, we think a large step was taken in the right direction when the city, by her vigorous and successful effort, secured the annexation of the whole of Fresh Pond and the adjoining territory, thus giving the entire municipal control of the borders of the "city well" to the City Council.

We wish to call your attention to the recommendation of the committee in regard to the necessity of having a sewer constructed to carry off the foul matter from Cider Mill Pond and Richardson's Pond in the Cushing Street district. We have frequently called your attention to the importance of this matter

in former reports; but now, re-enforced as we are by the judgment of such eminent authority, we must again urge this matter upon your practical consideration. This territory is now all in the city of Cambridge, and want of jurisdiction can no longer be urged as a reason for further delay. The importance and necessity of this sewer have been conceded by all who have examined the subject, and its neglect has been a just cause of complaint against the city by our water takers.

During the past year, the water in the pond has been very low, and the shores have been laid bare to an unprecedented extent. A large amount of work has been done in the way of cleaning up the borders of the pond. The drainage from Peat Pond, which was very objectionable, has been stopped by putting down a drain pipe leading into the sewer near the Pumping House; and all that section of the pond from the Boat House around the cove, about which so much was said last winter at the State House, has been cleaned up around the borders, and now presents a comparatively neat appearance.

The board thought the present a good opportunity to put up some dams, which would shut off in a measure some of the most objectionable nooks around the pond. It was only intended to put up gravel banks, through which the water would freely percolate, and while such banks were not expected to keep out of the pond any bad matter that might be in solution, yet it would keep out anything of this kind that might be in suspense, or floating on the surface. The amount of the latter that catches on our screens, shows that there is a call for this protection, as it grows to a large extent on the south and southwest parts of the pond, and is driven over towards our conduit by the prevailing winds. Of course but a small part of this material finds its way into our conduit, but the rest must ultimately sink in the water and decompose in that part of the pond nearest our engine-house, from which we constantly draw water.

We made application to the City Council for an appropriation of $5,000 to enable us to do this work, which, upon visiting the pond and seeing the necessity of its being done, you promptly granted; afterwards, when it was found it might involve a further expense in land damage (which we reported to you as soon as it came to our knowledge), you withheld your

approval of our going on with the work until the probable damage could be ascertained. As it was found impossible to ascertain what the damage might be, the alternative presented was to build the dams and incur the liability of damage, or instead, to clean out the nooks and thus accomplish the same results. The latter plan would involve a large expense to begin with, but it would have the added advantage of enlarging our storage capacity, remove all danger of matter in solution coming through the dams, and settle all questions of damage to the abutters. As the Council have decided not to adopt the plan of building dams, and we believe that something should be done in this direction, it is our purpose to ascertain the cost of cleaning out these nooks at the present time, when the water is so low, and we will make it a matter of further communication to you.

We will conclude this part of our report, in regard to the purity of the water, by recommending that the pipe sewer to take the sewage now entering the pond from Cider Mill Pond and Richardson's Pond be built at once without further delay, to connect with the present sewer near our engine-house, at a cost as made up by our City Engineer of about $10,000.

Water Supply.

We now come to our second point, in regard to the necessity of seeking a further supply of water.

In regard to our present supply, it must be borne in mind that the experts employed by the committee condemned a large part of our contingent water supply. The committee recommended the use of water from Wellington Brook at certain limited seasons, and under favorable circumstances, as we have been using it in times past; but our experience has taught us this cannot be relied upon in times like these. The committee requested our City Engineer to make investigations as to the capacity of Fresh Pond as a water supply. He reported to them these "Conclusions": —

"*First.* That the measurements made about the time the works were started in 1855–56 show that the pond did at that time yield a daily average supply of 2,125,000 gallons, as shown by Mr. Bardwell's measurements, and 1,634,256 by Mr. Whitwell's.

"*Second.* From the pumping records, and the rise and fall of the pond level, we find that for a term of years, when the pond has not been supplemented from any other source, there has been pumped a quantity of water varying from 1,461,048 to a little over 2,000,000 gallons in twenty-four hours, without serious loss to the pond; but when this quantity (2,000,000 gallons) has been exceeded, there has been a constant lowering of its surface without recovery. When the consumption had reached 2,700,000 gallons, the pond became reduced more than seven feet below high-water mark, and was evidently drawn upon much beyond its capacity.

"*Third.* That the present drainage area and the ground water will probably furnish (including the conduit to Wellington Brook) in a year of average rainfall about 1,750,000 gallons daily, and in a wet year possibly 2,000,000 gallons. The pond would probably not yield as much in a very dry year, or a succession of dry years."

It will be seen by this that "about 1,750,000 gallons daily" is all that we can really depend upon from our present water supply with an average rainfall; anything further than this must come from a combination of circumstances in regard to frost, snow, and rain which we cannot rely upon, by which we might safely use the water from Wellington Brook.

The correctness of the report of our City Engineeer, given above, has been singularly proved by our experience this year, in regard to "Fresh Pond and the conduit to Wellington Brook," as this has been almost our sole dependence, as the water from the Filter Basin beyond Wellington Brook has been open only a comparatively small part of the year, — since Sept. 28.

By reference to the tables herein furnished, it will be seen that the average daily consumption of water the past year was 2,423,200 gallons, the total pumping for the year having been 886,898,400 gallons. During the months of March, April, and May, the level of the pond was maintained above the point of starting at the beginning of the year, and fourteen one hundredths of a foot gained, or about one and three fourths inches; the water for these months having evidently been furnished from outside sources, mostly from Wellington Brook. The

amount furnished by the pond itself, we think, will be nearly shown by the following calculations based on these facts: —

		Gallons.
Whole amount of water pumped during the year		886,898,400
Deduct amount pumped in March, 31 days .	67,757,400	
Deduct amount pumped in April, 30 days .	65,006,700	
Deduct amount pumped in May, 31 days . .	87,130,800	
Deduct gain in these months, $1\frac{3}{4}$ inches at 4,000,000 gallons per inch	7,000,000	
		226,894,900
Showing the amount of water furnished by the conduit south of Wellington Brook, Filter Basin, and Pond, in 274 days to be		660,003,500
Deduct amount received from Conduit south of Wellington Brook, 274 days @ 500,000 gallons per day, as ascertained by City Engineer	137,000,000	
Deduct amount received from the Filter Basin, 63 days @ 400,000 gallons per day, measured as above	25,200,000	
		162,200,000
And we have the amount of water furnished by the pond during the 274 days to be		497,803,500
We have found that the level of the pond was reduced during the year 3.75 feet, or 45 inches. Deduct now 45 inches @ 3,500,000 gallons per inch (the area of the pond being much reduced)		157,500,000
And we get at nearly the amount of water furnished by the pond from springs and ground flow, being the unseen sources of supply of water to the pond		340,303,500

This amount is equal to 1,241,984 gallons per day. We think this falling off in the pond supply is clearly accounted for by the falling off in the rainfall the past two years.

The foregoing calculations take in the supply for the whole year, and show the pond capacity for 274 days. Some have entertained the idea that as we lowered the pond level by pumping out of it, we should reach a point where the inflow would equal our wants, and the pond would go no lower. We wish now to present a statement which we think proves that so far as we have gone, exactly the contrary of this is true, and that the lower we pump the pond, the more the supply to the pond from unseen sources diminishes.

		Feet.
We find that on the last of November, the pond stood below high-water mark		8.33
On the last of August it stood at		6.79
Showing loss in the pond in three months to be		1.54
or about 18½ inches.		

		Gallons.
Whole amount of water pumped during the months of September, October, and November was		214,007,900
Deduct from this 30 days from Conduit south of Wellington Brook @ 500,000 gallons	15,000,000	
Also 61 days' supply from the Conduit including the Filter Basin @ 900,000 gallons	54,900,000	
Also deduct 18½ inches of water, being the loss in the pond level, @ 3,500,000 gallons	64,750,000	
		134,650,000
And we have as the amount furnished by the pond the last three months only		79,357,900

This is equal to 872,065 gallons daily, showing a significant falling off, which should command most careful consideration.

As early as June the low level of water in the pond, with the continued dry weather, caused serious apprehension on the part of the Board as to whether our supply would hold out until the expected fall rains came to reinforce it. There were but two ways open to us in case the pond should fall below the reach of our pumps. One way was to seek a temporary supply from Boston, and the other was to pump into our Conduit, and reduce our pond to a lower level than our main pumps would reach. It was decided to seek a connection with the Boston Water Works as the best thing for us to do, and our president obtained from the Boston authorities the permission to connect with their pipes at Brookline Bridge. No price was agreed upon, for we did not know that we should want any water from them. On their part they only agreed that they would give us a supply in case of necessity. On our part, we at first thought if the pond should fall below the reach of our pumps, that we could arrange with Boston for a partial supply until the fall rains came to our relief, cheaper than we could provide for pumping into the Conduit. But when September came and no rains of any account, a committee of this Board waited on the

Boston Water Board to see what terms we could make with them for water. We found that they were no better off in some respects than we were; that already they had commenced to pump into their Conduit at the Mystic Works, with the prospect that, unless rains should come before sixty days, they would have to do the same thing at Cochituate Lake. Under these circumstances we could not reasonably ask them to supply us until we had exhausted all our means to supply ourselves. This made it necessary to arrange to pump into our Conduit as soon as possible.

The necessary engine, boiler, and pump have been purchased and set up on the border of the pond, near the Conduit gate-house, and the same is now ready for use; none too soon, as the water is already out of reach of one of our main pumps, and if the pond continues to fall, it will soon be out of reach of the other pump. When we begin to pump into the Conduit, all our means of water supply for the city of Cambridge, with her more than fifty thousand inhabitants, would depend on one pump, if it had not been for the connection we made with the Boston Water Works. We think this connection one of the wisest and most prudent things ever done in connection with our water works, as it removes from us the fear of a water famine, and secures us against an exigency which we hope may never come; but if it should come, the use of this connection a single day would be worth more to the city of Cambridge than it all cost. We have treated this matter the more fully, because we hear there exists in the minds of some a doubt of the wisdom of making the connection, but this doubt we think will be removed when the facts are known and duly considered.

In looking around to see where any additional supply of water can be secured, we do not find any sufficient sources, except we go to the Shawsheen River, or make arrangements with the city of Boston. The first seemed to us, after examination, to be the best and surest supply. Our City Engineer, at our request, has examined the amount of water flowing at this extremely dry time, and made survey of the route, and estimates of the cost to bring the water into Fresh Pond; and on the strength of his report, we recommended your applica-

tion the coming winter to the Legislature, for the right to take this water, and we understand that proper notice has been given by the Mayor that it is the purpose of the city to apply for this water.

We think if the Boston Water Board was so disposed, we could arrange with them to let us have the water to fill up our pond, at seasons of the year when they have large amounts running away over their dams, and during the night-time, when drawing from their main pipes would not interfere with their own citizens' supply by reducing their pressure.

We present this matter for your earnest consideration, believing that nothing concerning the welfare of our citizens and the future prosperity of our city is of so much importance now as the subject of securing an ample supply of pure water. We know the first cost may seem large, but we think in the future, as in the past, the water works, well managed, will pay their own way, without calling on the tax-payers.

As soon as it shall be found that the Legislature will grant us the right to increase our water supply by taking the water from Shawsheen River, we shall submit to you the plans of what we deem best to do.

For detailed statements of the condition of the water works in all its parts, we would refer you to the reports made to us by the registrar and superintendent, and herewith submitted as part of our report.

We cheerfully bear testimony to the faithfulness of the officers under our charge, and we believe that this department was never in so good condition as now. We also wish to acknowledge our obligations to the City Engineer and the City Solicitor for many services kindly rendered.

GEO. P. CARTER,
C. W. KINGSLEY,
H. L. EUSTIS,
J. WARREN MERRILL,
K. S. CHAFFEE,
JAS. M. W. HALL,
CHARLES WALKER,
} *Water Board.*

Analysis of Water from Fresh, Spy, and Little Ponds, by Prof. E. S. Wood, during the season of 1880.

Figures express parts per 100,000 of water.

Number.	Date.	Locality.	Filtered or Unfiltered.	Free Ammonia.	Albuminoid Ammonia.	Chlorine.	Total Residue.	Hardness.	Remarks.
	May 15.	Fresh Pond (200 feet from Pumping Conduit).....	Filtered.	0.0058	0.0276	1.60	11.25	4½°	
	May 31.	Spy Pond (near outlet) ..	"	0.0132	0.0336	2.80	14.25	5½°	
	May 31.	Little Pond (gate-house)..	"	0.0026	0.0314	1.50	12.50	5°	
1	July 6.	Fresh Pond (near end of Pumping Conduit).....	"	0.0102	0.0290	2.00	16.00	5½°	
2	July 6.	Fresh Pond (mouth of Conduit at Black's Nook).	"	0.0052	0.0122	3.00	27.50	7¼°	
3	July 6.	Fresh Pond (at Black's Nook)	"	0.0182	0.0195	3.20	23.50	7½°	
	July 21.	Fresh Pond (near end of Pumping Conduit).....	"	0.0056	0.0200	2.00	12.50	5¼°	
	Aug. 23.	Fresh Pond (200 feet from Pumping Conduit).....	"	0.0146	0.0260	1.85	12.00	6°	
	Aug. 23.	Faucet on Chauncey St...	"	0.0026	0.0250	1.85	13.00	6°	
	Sept. 16.	Fresh Pond (at Black's Nook Conduit).....	"	0.0029	0.0070	3.35	27.75	9°	No blackening of the residue when ignited therefore the volatile residue consisted of volatile mineral matter.
	Sept. 25.	Faucet on Chauncey St...	"	0.0021	0.0312	1.85	14.50	5½°	
	Oct. 6.	Spy Pond.....	"	0.0374	0.0454	2.80	16.25	6½°	Very turbid, and contained much clathrocystis. Residue blackened considerably.
	Oct. 6.	Little Pond	"	0 0134	0.0658	2 30	18.75	6°	Very turbid. Residue blackened considerably.
	Oct. 6.	Fresh Pond	Unfiltered.	0.0080	0.0270	1.75	14.00	6½°	Was quite clear and of good color.
	Oct. 7.	Spring on north side of Fresh Pond.....	Filtered.	0.0126	0.0108	1.75	27.00	10°	
	Oct. 9.	Faucet on Chauncey St...	"	0.0011	0.0218	2.00	15.60	7½°	
1	Nov. 8.	Fresh Pond (mouth of Conduit at Black's Nook).	"	0.0208	0.0134	2.50	21.70	11°	
2	Nov. 8.	Fresh Pond (200 feet from Pumping Conduit).....	"	0.0475	0.0226	1.90	15.90	6½°	
3	Nov. 8.	Faucet on Chauncey St...	"	0.0208	0 0124	1.70	14.00	6½°	
	Dec. 11.	Faucet on Chauncey St...	"	0 0171	0.0252	1.70	15.50	8°	
	Dec. 11.	Fresh Pond (200 feet from Pumping Conduit).....	"	0.0923	0.0226	2.00	15.80	8°	
	Dec. 11. 1881.	Spring on north side of Fresh Pond	"	0.0141	0.0116	4.20	27.70	12°	
	Jan. 27.	Fresh Pond (at end of Pumping Conduit).....	"	0.0381	0.0404	1.60	11.30	7½°	
	Jan. 27.	Faucet on Chauncey St...	"	0.0101	0.0218	1.60	13.20	7½°	

REPORT

OF THE

WATER REGISTRAR.

WATER REGISTRAR'S OFFICE,
CAMBRIDGE, Dec. 8, 1880.

To the Cambridge Water Board:

THE undersigned herewith submits his Fifth Annual Report, showing the receipts, expenditures, and abatements for the year ending Nov. 30, 1880, together with a statement of the number of water-takers, fixtures, etc., and other matters in his department, as required by city ordinance.

Amount of bills remaining unpaid Nov. 30, 1879: —

Water rates	$1,763 66	
Meter rates	477 01	
Supplies and repairs	778 52	
		$3,019 19

Amount of bills placed in hands of City Treasurer for collection from Nov. 30, 1879, to Nov. 30, 1880: —

Water rates	$149,543 65	
Meter rates	28,488 15	
Supplies and repairs	3,599 78	
Off and on water, seals, and fines	879 47	
Rent of house at pipe yard	144 00	
		182,655 05
Total		$185,674 24

Deduct.	Abated.	Unpaid.	
Water rates	$4,954 62	$328 66	
Meter rates	157 54	92 53	
Supplies and repairs	11 26	604 52	
	$5,123 42	$1,025 71	= 6.149 13
Balance			$179,525 11

Receipts.

Water rates	$144,583 74	
Meter rates	28,286 45	
		$172,870 19
Water rates for previous year	$1,440 29	
Meter rates for previous year	428 64	
		1,868 93
		$174,739 12
Off and on water, seals, and fines	$879 47	
Rent of house at pipe yard	144 00	
		1,023,47
		$175,762 59
Supplies and repairs	$2,974 96	
Old iron	787 56	
		3,762 52
Total		$179,525 11
Amount reported by City Treasurer, as received by him		179,525 11

Expenditures.

Construction account		$25,234 04
Supply account		1,995 21
Maintenance account, viz.: —		
Care and repairs	$11,319 66	
Pumping service	9,639 35	
Office expenses	4,906 48	
		25,865 49
Total		$53,094 74

Abatements.

Abatements of water rates have been made during the year to the amount of	$5,112 16
Abatements on supply and repair account	11 26
Total	$5,123 42

(The above amount of abatements is caused by the necessary abatement of all charges upon fixtures sealed, or supplies shut off, whether per order of owners or for non-payment, before the books can be balanced. New charges are then made when the water is again let on.)

Refunds.

Water rates have been refunded for supplies shut off or fixtures sealed, to the amount of	$1,412 71
Add refund on warrant issued in 1879, paid in 1880	92
	$1,413 63

Water has been shut off for non-payment of rates, or per order of owners on account of vacancy, and seals have been applied by request of owners or occupants, as follows: —

Supplies shut off in 1880	402
Supplies let on in 1880	320
New supplies let on in 1880	137
Supplies let on, shut off in previous years	122
Seal-locks applied to fixtures in 1880	708
Seal-locks removed from fixtures in 1880	301
Seal-locks removed, put on in previous years	388

Water rates unpaid, Nov. 30, 1880	$140 33
City water rates unpaid, Nov. 30, 1880	188 33
Meter rates unpaid, Nov. 30, 1880	92 53
Supplies and repairs unpaid Nov. 30, 1880	604 52
Total	$1,025 71

Statement of the yearly revenue received from water rates since the purchase of the works by the city: —

From April 28, 1865, to Dec. 1, 1865	$32,367 19
" Dec. 1, 1865 " 1866	40,073 27
" " 1866 " 1867	52,733 62
" " 1867 " 1868	63,747 42
" " 1868 " 1869	76,149 30
" " 1869 " 1870	92,606 95
" " 1870 " 1871	111,782 65
" " 1871 " 1872	127,201 30
" " 1872 " 1873	146,117 32
" " 1873 " 1874	153,634 27
" " 1874 " 1875	138,880 37
" " 1875 " 1876	179,166 76
" " 1876 " 1877	154,843 59
" " 1877 " 1878	157,443 91
" " 1878 " 1879	164,681 90
" " 1879 " 1880	173,325 49

Comparative Statement.

	1879.		1880.	
Construction Account.				
Received	.....	$4,424 56	.....	$25,234 04
Expended	.....	4,424 56	.....	25,234 04
Supply Account.				
Received	.....	$2,883 17	.....	$3,762 52
Expended	.....	1,534 20	.....	1,995 21
Excess of receipts	.....	$1,348 97		$1,767 31
Maintenance Account.				
RECEIVED.				
Water rates, less refunds	$164,681 90		$173,325 49	
Off and On water, seals and fines	982 65		879 47	
Rent	144 00		144 00	
On Account of Bond of A. F. Fifield	1,250 00			$174,348 96
		$167,058 55		
EXPENDED.				
Care and Repairs	$12,878 61		$11,319 66	
Coal $3,523 85 / Pumping Service 4,192 56	7,716 41		9,639 35	
Office Expenses	5,398 06		4,906 48	
Interest on Water Debt	91,585 00		91,585 00	
Paid to Sinking Fund Commissioners,	45,855 00		45,855 00	
		163,433 08		163,305 49
Excess of Receipts		$3,625 47		$11,043 47
Supply Account, Excess of Receipts		$1,348 97		$1,767 31
Maintenance Account, Excess of Receipts		3,625 47		11,043 47
Excess of Total Receipts over Total Expenses		$4,974 44		$12,810 78

The excess of receipts over expenditures the past year, it will be seen, is $12,810.78. Following the precedent established in previous years, this large balance will be merged with other balances in the city treasury, without direct benefit to the water-takers.

Since I have held the position of water registrar, I have seen no reason why the unexpended balances of receipts from sales

of water bonds should not be held to be drawn against for subsequent expenditures for construction account; in fact, held as "ways and means" of the water-works finances, as unexpended balances of cash in the treasurer's hands are of the city finances. If this had been the rule, the Water Board would not have needed to call attention, as it repeatedly has, to the difference existing between the actual cost of water works and the amount of water bonds issued.

After paying from the sinking fund $186,400, to redeem bonds to that amount, the difference between the unpaid cost of works and the amount of outstanding bonds was, in 1878, $29,555.16, or, deducting difference between premium and discount on bonds sold, $6,827.10; a net amount due water works of $22,728.06.

The Committee on Finance of the City Council for the year 1867 called attention to the then disagreement of these two items, which "it would seem well to make hereafter correspond"; but it has continued in varying amounts till the present time.

The balance due the water works, as reported last year, was	$18,303 50
The amount expended the past year is	25,234 04
Leaving amount of expenditures now in excess of amount of bonds	$6,930 54
From this, however, should be deducted interest at six per cent (as paid on bonds) while above amount has been accruing	3,386 87
Leaving balance due the city	$3,543 67

This balance could now be easily settled by itself, and the accounts hereafter so kept as to correspond, by carrying forward balances, as above suggested; but I wish to call attention to another and far greater discrepancy.

From a careful examination of the annual reports of the City Treasurer and Water Board, and also of the Water Works Sinking Fund accounts, I find that the total receipts on account of the water works (other than for "construction" or "extension"), from the purchase of the works, April 28, 1865, to Nov. 30, 1880, amount to $2,065,981.61, while the payments for same period amount only to $1,945,868.74.

In arriving at these totals, I have not presumed to decide what should or should not be charged or credited to the water works; I have taken the items as they stand upon the books, although it is well known that large amounts have been charged to the water-takers for improvements or work done, in which (so far as now apparent or aught that memory recalls) they could have had only a general interest.

The total receipts, as shown above, exceed the total expenditures $120,112.87, which amount has lapsed into the city treasury. To this should also be added interest at rate paid on water bonds (six per cent) while accruing to Nov. 30, 1880, amounting to $60,281.83, making a total of $180,394.70.

I see no question as to this amount's belonging in the sinking fund of the water works; and I respectfully suggest that the City Council be requested to cause the auditor of accounts, or some other person or committee, to examine these figures, to the end that this account may be adjusted, and the sinking fund (representing the water-takers) receive its just dues.

In this adjustment the balance due the city on construction account could be deducted, leaving balance due the water works $176,851.03.

If (as may be the case) the Act of the Legislature for 1875 so far repeals the provisions of the Act of 1865 as to allow the city to claim and use for other purposes all surplus receipts of the water works, over and above the three per cent to be paid into the sinking fund, although such payment of three per cent may seldom, if ever, call for one dollar from the city treasury, while the surplus will possibly largely benefit the general tax-payers at the expense of the water-takers, then the above figures will be changed to read as follows: —

Excess of receipts over expenditures	$92,771 14
Add balance of interest on same	58,802 61
Total	$151,573 75
Deduct excess of expenditures on construction account	3,543 67
Balance due sinking fund	$148,030 08

(As will be seen, the amount of $27,341.73 has already lapsed into the city treasury since the passage of said Act in 1875, exclusive of interest on same while accruing.)

This amount, if transferred, will materially help the sinking fund, which, by the change of date of payment of the annual three per cent from June 30 to Nov. 30, in the late revision of the city ordinances, is caused to lose annually five months' interest on amount payable to it, which could be fairly offset, perhaps, by an additional payment of five twelfths of the annual payment for this year.

An examination of the sinking-fund account will also show that the allowance of interest on balances in Treasurer's hands has been discontinued, although the city still has the benefit of large amounts received in July, and not paid out on account of the water works for some months afterward, thereby saving interest on otherwise necessary temporary loans.

I wish also to emphasize what I have previously personally called your attention to, viz., the repeatedly expressed desire of many water-takers that water rates may be made payable at an earlier date than July; and although one branch of the City Council has negatived your recent request for such change, I feel that the grounds for such request are tenable, and that the reasons for it were misunderstood, as the granting of it will relieve many of the water-takers from present inconvenience, and will in nowise increase their amounts payable.

The month of July brings to business men generally increased expenditures, with lessened receipts, while many are endeavoring to enjoy the annual breathing spell. The month of August brings a notice (not required by city ordinance) of an overdue and overlooked water bill, necessitating a trip to Cambridge, or a draft from some distant point, to secure immunity from the penalty made imperative by city ordinance.

With the poorer classes the same season is necessarily improved in preparation for the October tax bill. The present arrangement is productive of much complaint, which is by no means restricted to those by whom it is more forcibly than elegantly expressed. If, as suggested, water bills for next July are made for nine months only, and afterwards annually in April, coming equidistant from "tax time," a proposed return to the present arrangement would meet with opposition from all classes of citizens.

During the year all premises in the city where Fresh Pond

water is used have been visited, and the office list of fixtures changed in accordance with the report of the inspectors. The increase of receipts is due to the thoroughness of this inspection, as well as to additional supplies, and a less number of seals applied on account of increased occupancy, while the large increase of meter rates shows unusual activity in manufacturing establishments.

One hundred and forty-seven new supplies have been laid during the year, eight of which are for houses formerly supplied by extensions from other houses, generally upon other streets. Eleven of the new supplies have not yet been paid for nor let on.

One hundred and fifty-six meters are now in use, an increase of twenty over last year. Twenty-nine have been placed in various locations during the year, and nine removed.

Besides the manufactories, etc., supplied by meter, water is now supplied to 10,537 families, 766 stables, with 1,865 horses and 260 cows, 202 shops, 277 stores and offices, by the following fixtures, viz. : —

12,831 faucets.	12 hopper closets.
3,486 wash-basins.	60 urinals.
1,999 wash-tubs.	68 yard hydrants
1,872 bath-tubs.	5 fountains.
4,370 pan closets.	1,001 hand hose.
694 slop closets.	3 tumbler-washers.

Also,—

579 fire-hydrants (including 4 on private premises).
14 fire-reservoirs.
16 drinking fountains in public squares.

The above is exclusive of the school-houses, engine-houses, police stations, and other city buildings, for which special rates are charged, except where meters are located.

Respectfully submitted,

J. WARREN COTTON,
Water Registrar.

REPORT

OF THE

COMMITTEE ON ACCOUNTS OF THE CAMBRIDGE WATER BOARD.

We have examined the abstract of the books of the Water Registrar as prepared by him, and the statements of the City Treasurer and Auditor of Accounts, all of which are herewith submitted for record on the books of this Board, and we find them to agree.

The amount of bills in the hands of the Treasurer uncollected Nov. 30, 1879, was: —

For water rates	$1,763 66	
" meter rates	477 01	
" supplies and repairs	778 52	
		$3,019 19

The amount of bills placed in his hands for collection by the Water Registrar during the year ending Nov. 30, 1880, was: —

For water rates	$149,543 65	
" meter rates	28,488 15	
" supplies and repairs	3,599 78	
" turning off and on, seals, and fines	879 47	
" rent of house at pipe yard	144 00	
		182,655 05
Of this amount the Treasurer has collected	$179,525 11	
There have been abated	5,123 42	
And there are in his hands uncollected	1,025 71	
	$185,674 24	$185,674 24
There have been refunded		$1,412 71
Which amount, deducted from the total receipts by Treasurer ($179,525.11), leaves net receipts		$178,112 40

The committee calls attention to the fact that the Water Registrar has no vouchers from the City Treasurer for bills sent to that department for collection. It is very creditable to the Water Registrar, that in making up his accounts without reference to the Auditor's or Treasurer's departments, the amounts tally exactly.

We suggest that hereafter vouchers should be furnished the Registrar for all bills turned over to the City Treasurer by him.

J. WARREN MERRILL,
JAMES M. W. HALL,
CHARLES WALKER,
} *Committee on Accounts.*

REPORT

OF THE

SUPERINTENDENT OF THE WATER WORKS.

To the President and Members of the Cambridge Water Board:

Gentlemen, — The Annual Report of your superintendent, upon the condition of the works and the operations of the past year, is herein presented.

Total number of gallons of water pumped, 886,890,400 gallons.

Coal consumed per million gallons pumped, 1,825.30 pounds.

Water sold by meter and that used for watering streets, 170,471,250 gallons; leaving 716,419,150 gallons for domestic use.

Number of gallons for each inhabitant on whole amount pumped, $46\frac{3}{4}$ gallons.

Number of gallons for each inhabitant on amount for domestic use, $37\frac{3}{4}$ gallons.

Spy and Little Ponds, Wellington Brook, and Conduit.

The pipe connection between Spy and Little Ponds has not been used during the year. Its gates are in good condition. Spy Pond, during the past year, has contained large amounts of the weed known as clathrocystis; and as the result of several chemical analyses, its water has been deemed unfit for domestic use.

The Filter Basin is in good condition, and water has been drawn from it since the 28th of September.

Inspections of Wellington Brook and its branches have been

made, and they were found in their usual condition. The weeds have been removed and the brook cleaned out from the gate-house to the branch in Frost's meadows, where a temporary gate has been set, by permission of the land-owner, to turn the water from Little Pond to the Conduit. Water has been drawn from this source at all available opportunities during the months of February, March, and April.

Inspection has been made of the Conduit interior, from Wellington Brook to Fresh Pond. It was found clean and, except at Black's Nook gate-house, where a slight settling is apparent, in perfect repair.

Fresh Pond.

The exceedingly low stage of the water has permitted the removal of great quantities of weeds. Three nooks also have been cleaned out and greatly improved; one on the north side of the pond between the Tudor ice-houses, one on the south side opposite the hotel grounds, and one, called Boathouse Nook, on the east side. There yet remain three others that should be cut off from the pond, as contemplated at one time during the past summer.

Apprehensions for the future have also compelled the providing an auxiliary pump at the pond. A pump-house has been built near the draught conduit and the gate-house, with a flume 54 feet in length and 5 feet wide, reaching deep water. A 35 horse-power portable engine and a twelve-inch "Heald & Siscoe" pump, with abundant capacity to supply the engines at the pumping works, have been placed for the purpose, if needed, of pumping from the pond into the Conduit. By this arrangement, water can be drawn from a depth as low as grade 1.00, or four feet below the inside bottom of Conduit.

The elbow and one length of the draught-conduit pipe, that had become detached and fallen into the pond, have been raised and placed in proper position. New girders and braces have been bolted to the piling, and girders and stringers have been fastened on the top of the trestle-work, binding the whole structure together and securing additional strength against the action of the ice.

Nothing has been done on the engine-house lot and Tudor

Park other than the general care of their walks and trees, and cutting the grass.

The wall between the boiler-room and coal-shed, that was damaged while getting in the coal last year, has been rebuilt, the Fitchburg Railroad Company paying one half the expense.

The engineer's report appended shows the condition of the engines and boilers.

A six-inch drain has been laid in Fresh Pond Lane, from Peat Pond on the easterly side of the lane to the railroad location, where it empties into a an open ditch and the water is carried to the sewer near the engine-house. This pond formerly emptied into Fresh Pond, but the water being very objectionable, it was cut off about two years ago; having no outlet, the above drain became a necessity.

Reservoirs.

Nothing has been done other than the usual care of walks and cutting the grass, except slight repairs of valve. No leakage has appeared since the repairs were made the preceding year, except at the foundation, where it is very slight, and no more than at completion of repairs. About thirty feet of retaining wall on the west side near the north corner, I think should be taken down and rebuilt.

The chronograph is in perfect working order, and is constantly recording the fluctuation of the water in the reservoir.

Distribution Pipes.

The most important extension has been the connection with Boston by the sixteen-inch line through Putnam Avenue from Pleasant to Brookline Street, thence through Brookline Street and across Brookline Bridge (the pipe across the river being enclosed on a pipe bridge with an inverted siphon at the draw) to Brighton Avenue, where a connection was made with the sixteen-inch main in Boston.

A six-inch connection of the lines on Portland Street and Potter Street through Binney and Ninth Streets has been made.

The old four-inch line on the west side of Mt. Auburn

Street, between Ash and Hilliard Streets, has been abandoned; Brewer and Gerry Streets, which were formerly connected on this main, being now connected with the new six-inch main on the east side of Mt. Auburn Street.

Forty-four feet of four-inch pipe have been taken up on Potter Street, westerly from Third Street, and a six-inch pipe substituted.

New Supplies.

One hundred and thirty-nine new supplies have been laid this season, which, added to the number reported last year, makes the present total 7,322. Thirty-nine old supplies have been renewed, and 101 sidewalk shut-offs have been put on to old supplies. A total number of 195 leaks have been stopped. Of these, 38 were on three-inch pipe and upwards, 51 on supplies in street, and 106 on premises, reported by the inspector, and repaired by the owner or occupant. During the year 94 new gate boxes have been set in place of decayed ones, 16 new hydrant boxes and 8 new meter boxes. Twenty new gates and blow-offs have been set.

Hydrants, Meters, Fountains, and Standpipes.

One new post hydrant, "Pattee & Perkins," has been set in a new location, and two hydrants have been put in to replace broken ones; viz., one in college grounds, broken by firemen, and one corner of Dunster and South Streets, broken by W. T. Richardson & Co.'s coal team. One flush hydrant has been discontinued, making number of hydrants now in use 579, of which 240 are post and 339 flush hydrants. Three new garden hydrants have been set, making the total number in use 110.

Twenty-nine new meters have been set and 9 discontinued. The present total is 156.

The number of drinking fountains remains the same as at date of my last report. All are in good repair.

One new standpipe for street-watering has been set on Prison Point Street, one discontinued on Fifth Street, and one changed to new location; viz., from North Avenue at Forest Street to North Avenue near Roseland Street.

Pipe Yard.

The buildings are in good repair except that the house, which stands on posts, has settled somewhat. I recommend that a stone and brick foundation be put in it the coming year.

Accompanying this report is that of the engineer at the pumping works, and tables showing the monthly amount and daily average of water pumped, the Fresh Pond record of water height, the locations of meters, fountains, and standpipes, the details of main and supply extensions, and the account of stock on hand.

All of which is respectfully submitted,

HIRAM NEVONS, *Superintendent.*

List of Meters in Use Nov. 30, 1880.

METERS.	Locality.	Size.	Description.
		Inches.	
American Net and Twine Co	Third St.	1½	Worthington.
Amerean Steam Safe Co	Main St.	1	"
Bay State Glass Co	Bridge St.	1	Union Rotary.
Bird, H. M. (Iron Foundry)	Broadway	⅝	"
Boston Bolt and Nut Co	Portland St.	⅝	Désper.
Boston Woven Hose Co	Portland St.	⅝	Worthington.
Boston Stamping Co. (Tin Ware M'f'y)	Third St.	2	"
Boston Chemical Works	Third St.	¾	"
Boston & Albany R R. (Tank for filling Locomotives)	Waverly St.	1½	"
Boston & Lowell R. R. (Repair Shop)	Bridge St.	2	"
Boston & Lowell R. R. (Roundhouse)	Prison Point St.	2	"
Boston & Lowell R. R. (New Roundhouse)	Prison Point St.	2	Crown.
Boston & Lowell R. R. (Paint Shop)	Prison Point St.	1	"
Boston & Lowell R. R. (Filling Locomotives)	Prison Point St.	6	Union Rotary.
Broomhead, M. (Coffee Grinding)	Columbia St.	1	Worthington.
Bullock, O. S. (Machine Shop)	Broadway	1	"
Carr Bros. (Soap Factory)	Lopez St.	1	"
Capen, Sprague & Co. (Oil Works)	Sixth St.	¾	Désper.
Cambridgeport Diary Co	Magazine St.	1	Worthington.
Cambridge Gas Light Co	Third St.	2	"
Campbell Bros. (Boiler Factory)	Osborn St.	⅝	Désper.
City of Cambridge (Shepard School-house)	North Ave.	2	Worthington.
City of Cambridge (Ward 1 Building)	Brattle Sq.	2	"
City of Cambridge (Ward 4 Building)	Central Sq.	1½	"
City of Cambridge (Cambridge Cemetery)	Coolidge Ave.	4	"
City of Cambridge (Almshouse)	Tannery St.	2	"
City of Cambridge (In Yard, Stable)	Hampshire St.	¾	Désper.
City of Cambridge (In Yard, Engine house)	Hampshire St.	⅝	"
Close, Geo. (Confectionery)	Broadway	1	Worthington.
Clark, B. P. & Co. (Confectionery)	Main St.	1½	"
Cochran, A. & Co. (Ammonia Factory)	Potter St.	¾	"
Coleman, John & Sons (Coal Wharf)	Broadway	1	"
Cooper's Car Wheel Co	Hampshire St.	¾	"
Cofran, S. M. (Brick Yard)	Concord Ave.	1½	"
Coolidge, J. G. (Floral Conservatory)	Coolidge Ave.	1	"
Davis, Curtis & Co. (Soap Factory)	Broadway	1½	"
Davis, J. C. & Son (Soap Factory)	Broadway	1	"
Davis, Mason (Soap Factory)	Lincoln St.	⅝	"
Dailey, Charles W. (Livery Stable)	Cambridge St.	1	"
Downing, Theo. (Tannery)	Eustis Ct.	1	"
Draper, F. & Co. (Brass Works)	Otis St.	¾	"
Eagle Rubber Co	Potter St.	2	"
East Cambridge Club Stable	First St.	1	"

List of Meters in Use Nov. 30, 1880. — *Continued.*

METERS.	Locality.	Size.	Description.
		Inches.	
Ela Bros. (Ivory Turning)	Broadway	1	Worthington.
Episcopal Theological Seminary, Church	Brattle St.	2	"
Episcopal Theological Seminary, Dormitory	Brattle St.	1½	"
Fenton, N. & Co. (Mattress Factory)	Gore St.	¾	Désper.
French, C. A. (Hotel)	Farwell Place	1	Worthington.
Geldowsky, F. (Furniture Manufactory)	Otis St.	1	"
Gilmore & Eustis (Cambridge Rolling Mill)	Portland St.	2	"
Goepper Bros. (Barrel Factory)	Ninth St.	2	"
Greene, A. T. & Co. (Manuf. of Artists' Colors),	State St.	⅝	Union Rotary.
Greely, Leander (Planing Mill)	Broadway	1½	Worthington.
Griffin & Dolan (Soap Factory)	Decatur St.	¾	"
Harvard College (Boylston Hall)		1	"
Harvard College (Holworthy Hall)		¾	"
Harvard College (Stoughton Hall)		⅝	"
Harvard College (Seaver Hall)		⅝	"
Harvard College (Thayer Hall)		1½	"
Harvard College (In Yard)		1½	"
Harvard College (Memorial Hall)	Cambridge St.	2	"
Harvard College (Boat-House)	Flagg St.	¾	Ball & Fitts.
Harvard College (Botanical Garden)	Garden St.	1	Worthington.
Harvard College (Gymnasium)	Cambridge St.	1½	"
Harvard College (Holyoke House)	Harvard St.	2	"
Harvard College (Museum Comp. Zoöl.)	Divinity Ave.	1	"
Harvard College (Scientific School)	Kirkland St.	⅝	Désper.
Hazlett, W. H. & Co. (Planing Mill)	Otis St.	1½	Worthington.
Hale, Teele & Bisbee (Soap Factory)	Davis St.	¾	Désper.
Hews, A. H. & Co. (Pottery)	Crescent Ave.	1	Worthington.
Hixon, Edward & Co. (Furniture Manufactory),	Harvard St.	¾	"
Holmes, F. M., Manuf Co. (Furniture)	Cambridge St.	2	"
Houghton, H. O. & Co. (Publishers)	Blackstone St.	2	"
Hovey & Co., North Side (Floral Conservatory),	Cambridge St.	1	"
Hovey & Co., South Side (Floral Conservatory),	Cambridge St.	1	"
Jaynes & Co. (Barrel Factory)	Pacific St.	⅝	Ball & Fitts.
Jones, C. L. & Co. (Soap Factory)	Pearl St.	¾	Worthington.
Kemp, L. & Son (Soap Factory)	Davis St.	1	Ball & Fitts.
Kennedy, F. A. (Cracker Bakery)	Green St.	1	Désper.
Kendall & Roberts (Iron Works)	Main St.	¾	Worthington.
Low, J. W. (Tannery)	Reed St.	1½	"
Loan, J. J. (Soap Factory)	Columbia St.	⅝	Désper.
Little, Brown & Co. (Book Bindery)	Blackstone St.	⅝	Worthington.
Lincoln & Chamberlain (Slaughter House)	Distillhouse St.	¾	"
Mason & Hamlin Organ Co.	Broadway	1	"
Middlesex Bleachery (Dye Works)	Sacramento St.	¾	"
Middlesex County (House of Correction)	Thorndike St.	2	"
Middlesex County (Court House)	Thorndike St	¾	Ball & Fitts.
Middlesex County (Court House)	Otis St.	¾	"
Middlesex County (Registry of Deeds)	Otis St.	¾	Worthington.
Millan, Alexander (Fish Market)	Brattle St.	⅝	Désper.
Möring, Mrs. A. L. (Beck Hall)	Main St.	1	Worthington.
Mount Auburn Corp. (Floral Conservatory)	Brattle St.	1	"
Mount Auburn Corp. (Cemetery)	Mt. Auburn St.	¾	Désper.
Murdock, Walter H. (Floral Conservatory)	Grigg St.	⅝	"
New England Glass Co.	North St.	2	Worthington.
Norton, E. H. (Soap Factory)	Winsor St.	⅝	"
O'Brien, John (Slaughter House)	Beech Ave.	1	"
Page, Geo. G. & Co. (Box Factory)	Hampshire St.	2	"
Parry Bros. & Co. (Brick Yard)	Raymond St.	⅝	"
Pike, James & Co. (Livery Stable)	Church St.	1	"
Pike, James & Co. (Livery Stable)	Farwell Place	¾	"
Porcellian Club (Harvard Students)	Harvard St.	⅝	Désper.
Porter's Hotel (Frank Locke)	North Ave.	¾	"
Prospect House (Joseph Uhrig)	Main St.	1½	Worthington.
Ross House (Mrs. H. P. Ross)	Broadway	⅝	"
Reardon, John & Sons (Oleomargarine Factory)	Talbot St.	4	"
Reardon, William (Soap Factory)	Portland St.	⅝	Désper.
Revere Sugar Refinery (South Side)	Water St.	3	Worthington.
Revere Sugar Refinery (North Side)	Water St.	3	Union Rotary.
Reversible Collar Co	Mt. Auburn St.	1	Worthington.
Rhoades, Silas & Son (Planing Mill)	State St.	2	"
Rideout, M. E. & D. T. (Planing Mill)	Banks St.	¾	"
Roberts, O. P.	Brattle St.	1	"
Rogers, Geo. M.	Washington St.	3	"

List of Meters in Use Nov. 30, 1880. — *Concluded.*

METERS.	Locality.	Size.	Description.
		Inches.	
Russ Moulding Co.	Thorndike St.	1	Désper.
Sands, John L., Estate of (Brick Yard)	Walden St.	¾	Worthington.
Sanborn, G. P. & Son (Pickling Factory)	Gore St.	¾	Désper.
Shorey, George L. (Laundry)	Soden St.	1½	Worthington.
Shaw & Applin (Furniture Manufactory)	Bridge St.	1½	"
Smart, D. C. (Wood Turning)	Main St.	⅝	Désper.
Sortwell & Co. (Distillery)	Distillhouse St.	2	Worthington.
Squire, John P. & Co. (Slaughter House)	Gore St.	2	"
Squire, John P. & Co. (Slaughter House)	Gore St.	2	"
Squire, John P. & Co. (Stable)	Gore St.	1	"
St. Mary's Church	Norfolk St.	2	"
Stiles, John C. (Omnibus Stable)	Cambridge St.	2	"
Stiles, John C.	Inman Square	⅝	Désper.
Thayer, Henry & Co. (Laboratory)	Broadway	2	Worthington.
Tower, Sylvester (Piano Key Manufactory)	Broadway	1	"
Tug "Henry Chapel" (Steamboat)	First St.	2	"
Tribune Publishing Co.	Linden St.	⅝	Désper.
Union Railway Co. (Washing Cars)	Dunster St.	¾	Worthington.
Union Railway Co. (Repair Shop)	Dunster St.	¾	"
Union Railway Co. (New Car House)	Dunster St.	⅝	"
Union Railway Co. (Wooden Stable)	Dunster St.	¾	"
Union Railway Co. (Brick Stable)	Dunster St.	1½	"
Union Railway Co. (North Side)	Cambridge St.	1	"
Union Railway Co. (South Side)	Cambridge St.	1	"
Union Railway Co.	Baldwin St.	1	"
Union Railway Co.	Mt. Auburn St.	1	"
Union Railway Co.	Main St.	¾	Désper.
Union Railway Co.	North Ave.	2	Worthington.
Union Railway Co.	Cambridge, cor. Baldwin St.	1	"
Union Railway Co.	River St.	1	"
Union Glass Co. (Packing Room)	Webster Ave.	⅝	Ball & Fitts.
Union Glass Co. (Pot Room)	Webster Ave.	1	Worthington.
Warren, J. H. (Felton Hall)	Cambridge St.	1½	"
Walworth Manufacturing Co	Main St.	1½	"
Wellington, J. A. & Co. (Coal Wharf)	Winter St.	⅝	"
Wilson, John & Son (Publishers)	Brattle Square	1	"
Woodbridge, S. F. (East Slaughter House)	Frank St.	1	"
Woodbridge, S. F. (West Slaughter House)	Frank St.	⅝	"
Woods, Geo. & Co. (Organ Factory)	Main St.	2	"
Wight & Seorgie (Marble Polishing)	Mt. Auburn St.	¾	"
Wyatt, H. M. (Brick Yard)	Dublin St.	¾	"

List of Drinking Fountains, Nov. 30, 1880.

Bridge Street, junction of Cambridge Street.
Broadway, southwest corner of Norfolk Street.
Brattle Square, east side of Brewer's Block.
Brattle Street, junction of Fresh Pond Lane.
Cambridge, south corner of Fifth Street.
Central Square, west side.
Central Square, east side.
Fort Washington.
Hampshire Street, junction of Broadway.
Harvard Square, at the flag-staff.
Inman Square, east side.
Main Street, junction of Front Street.

Main Street, junction of Mt. Auburn Street.
North Avenue, southwest corner of Walden Street.
North Avenue, north side, west of Cameron Street.
Putnam Avenue, southwest corner of Pearl Street.
Third Street, west side, north of Main Street.

List of Standpipes (for Street-watering), Nov. 30, 1880.

Brattle Street, near University Press.
Brattle Street, corner of Sparks Street.
Brattle Street, near Fayerweather Street.
Brattle Street, near Fresh Pond Lane.
Bridge Street, junction of Cambridge Street.
Broadway, near Third Street.
Broadway, corner of Sixth Street.
Broadway, corner of Winsor Street.
Broadway, junction of Hampshire Street.
Brookline Street, corner of Putnam Avenue.
Cambridge, near Warren Street.
Cambridge, near Winsor Street.
Cambridge, at Inman Square.
Columbia, near Austin Street.
Concord Avenue, at junction of Garden Street.
Dana, at corner of Chatham Street.
Dublin, near Fitchburg Railroad.
Gore, west of Third Street.
Green, near Western Avenue.
Harvard, corner of Prescott Street.
Inman, near Broadway.
Kirkland, near Quincy Street.
Main, near Portland Street.
Main, near Hancock Street.
Magazine, opposite Warland Street.
Mount Auburn, near Athens Street.
North Avenue, near Common.
North Avenue, corner of Sacramento Street.
North Avenue, near Roseland Street.
North Avenue, near Beech Street.
North Avenue, near Spruce Street.
North Avenue, corner of Norris Street.

North Avenue, opposite Tannery Street.
Prison Point Street, opposite Roundhouse.
Third Street, near Rogers Street.
Thorndike, near Third Street.
Western Avenue, near Howard Street.

New Main Pipe laid for Extensions and Renewals, from Dec. 1, 1879, to Nov. 30, 1880, inclusive, with the Number of Gates and Fire Hydrants used.

LOCATION.	Iron Pipe.		Gates.		Fire Hydrants.	
	Size.	Length.	No.	Size.	No.	Size.
	Inch.	Feet.		Inch.		Inch.
Watson and Pearl Streets	..	.....	1	4		
Groveland Street, south from Spruce	¾	253				
Winsor Street, south side of Hampshire	..	.....	1	4		
Market Street, west side of Winsor	..	.....	1	4		
Lambert Avenue, west from Walnut Avenue	6	60				
Washington Ave., north side Arlington Street	..	.....	1	6		
Binney Street, Portland to Ninth	6	873				
Ninth Street, Binney to Potter	10	43				
Ninth Street, Binney to Potter	8	187				
Portland and Binney Streets	..	.....	1	6		
Ninth and Binney Streets	..	.....	1	8	1	6
Harrison Street, south from Washington	6	100				
Third and Potter Streets, 4″ discontinued, 6″ substituted	6	44	1	6		
Tufts Street, north from Pearl	4	90	1	4		
Pearl Street, west from Tufts	4	456				
Brewer Street	1½	92				
Daye Court, to supply H. O. Houghton's houses	1½	180				
Brooks Street, south from School	4	206				
Court Street, off Putnam Avenue	¾	71				
Kirkland and Oxford Streets	..	.....	1	4		
Chestnut Street, south from Pearl Street	4	211				
Follen Street, near Waterhouse	4	16				
Spring Street, between Sixth and Ninth	4	147				
Webster Avenue, to Glass House supply	..	.....	1	4		
Putnam Avenue, Pleasant to Brookline	16	1,631				
Brookline Street, Putnam Avenue to the bridge,	16	1,666				
Aeross the bridge and siphon	16	790				
Essex Street, Boston, bridge to Brighton Ave	16	329				
Pleasant Street and Putnam Avenue	..	.....	1	16		
Magazine Street and Putnam Avenue	..	.....	1	6		
Pearl Street and Putnam Avenue	..	.....	2	4		
Brookline Street and Putnam Avenue	..	.....	1 1	16 6		
Brookline and Chestnut Streets	..	.....	1	4		
East end of bridge	..	.....	1 2	16 4		
Essex Street and Brighton Avenue, Boston	..	.....	1	16		
Essex Street, Boston, at west end of bridge	..	.....	1	4		

Recapitulation.

	16 in.	10 in.	8 in.	6 in.	4 in.	1½ in.	¾ in.	Totals.
Length of iron pipe in feet,	4,416	43	187	1,077	1,126	272	324	7,445
Number of gates	4	...	1	5	10	...	...	20
Hydrants	....	...	..	1	....	...	...	1

Statement of Stock on Hand, Dec. 1, 1880.

For Street Mains (Iron Pipe and Fittings).

Number of —	48 in.	30 in.	24 in.	20 in.	16 in.	12 in.	10 in.	8 in.	6 in.	4 in.	3 in.
Straight pipes (12 feet each	2	25	..	17	16	24	98	4	219	58	1
Elbows	..	..	..	..	2	..	2	..	..	2	
Bends (1-36″)	..	..	2	2	..	..	4	..	14		
Y branches	..	..	1	..	..	1					
Sleeves	..	2	4	8	2	2	6	1	6	7	12
Clamp sleeves	..	..	3	2	..	4	4	5	3	9	3
Drain offsets	..	..	..	..	..	..	..	..	25		
Offsets	..	..	..	..	..	..	6	..	12		
Gates	..	..	..	..	..	3	1	..	1	2	
Check-valves (old),	..	..	2								
Blow-offs	..	..	..	2-6″							
Caps	..	..	2	..	2	7	5	3	4	8	
Plugs	..	..	..	..	..	1	1	2	1		
Crosses	..	..	..	2-10″	1-12″	4-3″	7-6″	..	10-4″		
	..	..	..	1-20″	3-6″	1-4″	2-8″	1-8″	5-6″	17-4″	
	..	..	..	..	..	6-6″	2-10″				
	..	..	..	..	..	5-10″					
Reducers	..	..	1-10″	2-12″	1-6″	2-10″	4-6″	3-6″	2-4″	6-3′	
	..	..	1-8″	1-8″	..	1-6″	4-8″				
T's	..	..	3-6″	2-12″	1-6′	..	19-6″	12-6″	16-6″		
	..	..	1-8″	3-20″	..	4-6″	..	..	..	10-4″	1-3′
	..	..	1-24″	2-6″	..	1-4′	..	1-4″			

For Supplies (Galvanized Pipe and Brass Fittings).

	2½ in.	2 in.	1½ in.	1¼ in.	1 in.	¾ in.	½ in.
Length of galvanized pipe	16	228	35	310	180	500	28
Elbows	2	7	38	60	30	12	45
Street elbows	..	...	...	...	9	21	
Couplings	2	115	6	12	198	20	85
Unions for lead pipe	..	...	...	...	...	6	
Unions	..	14	12	25	6	15	
Stop and waste cocks	..	1	2	2	12	36	
Screw-cocks	..	...	1	3	7	22	
Corporation cocks	..	...	5	...	58	1	
Screw-cocks for cement pipes							
Sidewalk cocks	..	...	...	...	30	2	
Blow-off cocks	..	...	3				
Hydrant cocks							
Sill-cocks							
Hose-bibbs	..	...	...	...	13	2	3
Air-chambers	..	...	...	...	45	15	55
Socket-ends	..	...	...	...	6	100	
Lock-nuts	..	...	...	...	36	38	
Nipples	2	35	30	70	15	30	100
Hose nipples	..	...	...	...	...	5	
Plugs	..	2	3	5	20	3	
Bushings	..	...	...	...	12-¾″	6-½″	
Clips	..	12-1½	20-1¼″	12-1″	...	12	
T's, malleable	..	...	...	2	3	117	55
T's, cast-iron	..	300	130	120	130	450	50
Crosses, cast-iron	..	80	124	95	95	40	
Reducing couplings	..	...	...	...	...	100	
Caps	..	...	...	...	...	...	10

New Supplies.

Galvanized Pipe and Brass Fittings used from Dec. 1, 1879, to Nov. 30, 1880, inclusive.

	2 in.	1½ in.	1¼ in.	1 in.	¾ in.	½ in.	Total.
Length of galvanized pipe.....	126	14	36	388	5,555	..	6,119
Number of supplies	2	1	..	6	130	..	139
Number of stop and wastes	2	1	..	5	125	..	133
Number of screw cocks	1	..	..	8	107	..	116
Number of sidewalk cocks	...	..	..	6	131	..	137
Number of faucets	...	..	..	...	....	7	7
Number of standpipes.....	...	..	..	...	....	..	135

Stock in Shop and at the Yard.

2 horses.
4 wagons.
3 harnesses.
1 double-runner sled.
1 pung.
4 blankets.
2 oil-covers for horses.
1 hay-cutter.
1 large boom derrick.
1 breast derrick.
3 small derricks.
1 lathe, with the usual chucks and tools.
1 platform scale.
1 water motor.
1 pipe-threading machine with dies from ½″ to 2″.
4 plates from ½″ to 1″.
1 set of pipe-taps from ½″ to 2″.
1 drilling machine.
1 large hand pump.
8 thawing pumps.
2 hydrant wrenches.
9 pipe wrenches.
3 monkey wrenches.
3 2″ cock wrenches.
2 1″ cock wrenches.
9 sidewalk cock wrenches.
12 gate wrenches.
4 blow-off wrenches.
8 pairs of tongs.
7 pipe cutters.
4 tool chests.
18 lanterns.
2 bench vises.
6 rammers.
25 picks.
24 shovels.
4 chains.
2 hand carts.
3 lead-kettles and furnaces.
7 pails.
266 seals.
1,550 pounds of lead.
1 post hydrant.
4 garden hydrants.
25 old flush hydrants.
2 drinking fountains.
2 hydrant boxes.
4 small gate boxes.
4 large gate boxes.

2 meter boxes.
50 risers for gate boxes.
2 2″ meters.
3 2″ counter and ratchet movements.
2 1½″ counter and ratchet movements.
1 1″ counter and ratchet movements.
1 ¾″ meter.
2 ⅝″ meters.
2 ⅝″ counter and ratchet movements.
6 2″ meter dials.
2 1½″ meter dials.
3 1″ meter dials.
6 ⅝″ meter dials.

REPORT

OF THE

ENGINEER AT THE PUMPING STATION.

PUMPING STATION, CAMBRIDGE WATER WORKS,
CAMBRIDGE, Dec. 1, 1880.

Hiram Nevons, Esq., Supt. Cambridge Water Works:

SIR, — I would report that the engines and boilers are in good condition. During the past year No. 1 engine has been fitted with new air pump covers and trunk connections, the expense of which was $275. The work was done by Kendall & Roberts of this city, and was thoroughly satisfactory in every particular. Following will be found a statement of the expenses at the pumping station, together with the engine record, pond levels, and rainfall for the past year; also a list of stock and tools on hand.

E. C. BROOKS, *Engineer.*

Statement.

$722\frac{1520}{2240}$ tons Cumberland coal, @ $5.74	$4,148 18
Oil, waste, packing, etc.	257 17
Salaries	3,341 25
Repairs on engines and boilers	285 75
Tools	12 04
Repairs on buildings and care of grounds	696 69
Total	$8,741 08

Engine Record, Pond Level, and Rainfall.

Date.	Total Running Time.		Daily Average Running Time.		Total Coal consumed.	Daily Av. Coal consumed.	Total Water pumped.	Daily Average Water pumped.	Average Height of Pond.	Rainfall.
	hours.	min.	hours.	min.	pounds.	pounds.	gallons.	gallons.		
December, 1879	318	20	10	16	146,500	4,726	68,959,200	2,224,490	11.98	3.76
January, 1880	309	55	10	0	142,500	4,597	68,422,500	2,207,177	11.98	2.62
February, "	302	25	10	26	129,900	4,479	67,446,000	2,325,724	12.25	3.49
March, "	310	15	10	0	135,400	4,368	67,757,400	2,185,722	12.71	2.85
April, "	297	45	9	55	131,600	4,387	65,006,700	2,166,890	12.95	1.94
May, "	382	30	12	20	155,200	5,006	87,130,800	2,810,671	12.41	1 44
June, "	430	35	14	21	160,200	5,340	98,349,000	3,278,300	11.47	.73
July, "	346	0	11	10	126,800	4,090	76,117,800	2,455,413	10.56	6.49
August, "	337	15	10	43	124,600	4,019	73,701,600	2,377,471	10.06	3.48
September, "	332	5	11	4	121,800	4,060	70,862,100	2,362,070	9.39	1.63
October, "	337	25	10	53	122,900	3,965	71,690,600	2,312,584	8.82	2.63
November, "	330	5	11	0	121,400	4,047	71,455,200	2,381,840	8.52	2.25
Total	4,034	35	...	...	1,618,800	.....	886,898,400	.....	.....	33.31
Daily Average	11	1	...	...	4,423	.....	2,423,220	.....	11.09	

Stock on Hand, Dec. 1, 1880.

780 tons Cumberland coal; 45 gallons cylinder oil; 40 gallons machine oil; 12 gallons kerosene; ½ gallon benzine; ¾ gallon boiled oil; 1 gallon raw oil; ¾ gallon oil polish; 20 pounds cotton waste; 25 pounds rubber packing; 5 pounds hemp packing; 3 pounds Tuck's packing; 3 pounds asbestos packing; 24 9-inch rubber valves; 2 valve seats; 2 steam-gauges; 10 pounds Babbitt metal; 2 pounds solder; 3 pounds red lead; 3 pounds mercury; 10 pounds steel; 5 pounds sheet brass; 1¼ bales hair felt; 24 pounds soap; 15 feet 5-inch rubber belting; 10 files; 2 pounds emery; ½ quire emery cloth; 10 gauge-glasses; 12 lamp-chimneys; 3 dozen lamp-wicks; 2 lantern-globes; ½ barrel cement; ½ barrel kaoline; ¼ barrel brimstone; 10 grate bars; 300 fire brick; 300 pounds bolts and nuts; 1 pair plungers and rings for No. 2 engine; 20 feet 2-inch brass pipe; 30 feet 1¼-inch brass pipe; 7 feet ½-inch brass pipe; 12 feet ¼-inch brass pipe; 6 feet 3-inch iron pipe; 25 feet 1¼-inch iron pipe; 16 feet ¾-inch iron pipe; 40 feet ¼-inch iron pipe; 3 1½-inch globe-valves; 40 elbows; 18 T's; 12 unions; 20 nipples; 32 plugs; 30 couplings; 2 crosses; 22 bushings; 10 feet 24-inch flange pipe; 8 feet 6-inch flange pipe.

Tools, Furniture, and Instruments.

1 18-inch × 10 feet engine lathe; 1 lathe chuck; 6 lathe dogs; 8 lathe tools; 1 grindstone; 1 3 × 9 engine with shafting, belting, etc.; 1 vise and vise bench; 1 set pipe dies; 1 set pipe taps; 2 pipe cutters; 14 pairs pipe tongs; 1 set hand taps; 2 hand hammers; 1 copper hammer; 18 cold chisels; 8 files; 5 screw wrenches; 1 back saw; 1 Stillson wrench; 22 fork wrenches; 27 socket wrenches; 1 hydrant wrench; 6 gate wrenches; 2 clamp screws; 2 sledges; 2 ratchets; 18 drills; 1 breast drill; 2 jack-screws; 6 steel bars; 2 soldering irons; 4 cylinder head cranes; 1 level; 1 gasket cutter; 2 ladles; 12 eye bolts; 75 starting bolts; 2 starting keys; 1 chain fall; 2 wooden horses; 1 oil cabinet; 1 set measures; 1 6-gallon can; 3 3-gallon cans; 3 1-gallon cans; 2 lamp fillers; 2 funnels; 4 squirt cans; 1 oil pump; 1 carpenter's

bench; 4 planes; 4 hand-saws; 10 chisels; 7 gouges; 3 screw-drivers; 2 bit-stocks; 13 bits; 4 augers; 1 draw-knife; 1 spoke-shave; 2 axes; 2 mallets; 1 steel square; 1 set fire tools; 1 coal car; 1 pair platform scales; 1 wheelbarrow; 15 scoop shovels; 2 long handled shovels; 3 picks; 1 tube brush; 1 forge; 1 anvil; 5 pairs tongs; 2 hand chisels; 1 lawn mower; 2 steel rakes; 2 wooden rakes; 2 scythes; 3 forks; 1 weeder; 1 spade; 6 ladders; 3 step-laddders; 1 cast-iron roller; 200 feet 2-inch hose and pipe; 100 feet $\frac{3}{4}$-inch hose and pipe; 1 desk; 2 tables; 2 clocks; 18 chairs; 9 mats; 6 spittoons; 1 water cooler; 6 fire pails; 5 water pails; 4 bracket lamps; 4 lanterns; 2 hand lamps; 1 lot cocoa matting; 1 watering-pot; 1 dust-pan; 2 dust-brushes; 1 window-brush; 1 floor-brush; 2 scrubbing-brushes; 2 mops; 1 barometer; 1 hygrophant; 1 thermometer; 2 rain gauges; 1 snow gauge.

REPORT

OF THE

SCHOOL COMMITTEE FOR 1880.

The School Committee for 1880 begs leave to offer the following Report: —

As the work of the committee has been performed very largely by its various subcommittees, the special committee appointed to prepare this report has drawn its information upon the topics submitted to these several subcommittees, largely from their special reports. By pursuing this method, we present to the public the working of our school system in all its special departments, in a clear and definite manner.

The High School.

The past year has been one of gratifying success and prosperity. The principal, with restored health, has been able to give the school the full benefit of his invaluable services. The teachers in general have given ample proof of the worth of experience in a profession which affords indefinite room for growth, and in which it is only the lifelong learners that maintain an honorable place. The school is no less remarkable for the union of strictness and gentleness in its discipline, than for the thoroughness of its teaching. The cases that need more than timely and kindly admonition from the principal are singularly few. Prevention takes for the most part the place of censure and penalty. The pupils find themselves treated not only kindly, but what is more rare and difficult, with impartial justice, and they are therefore but little disposed to infringe upon the regulations,

or to violate the order of the school. What the teacher owes to the scholar is here naturally borne in mind, and the consequence is that the scholar, in general, is not forgetful of what he owes to the teacher and the school.

The principal of the High School has made a very elaborate report touching matters of importance, of which we give a synopsis. He reports that "in its classical department, the school is held to a high standard by the requirements of the college examinations, in which the young men uniformly succeed. The same remark may be made of the young women, as each graduating class contains a number of young ladies who intend to enter upon a collegiate course of study, and whose success in examinations is not inferior to that of the young men.

"In the English department it is difficult to maintain the same standard of scholarship, as the pupils in this department have no definite end in view, and are not stimulated by the careful examination which the classical students have to pass. Nevertheless, the great majority of our English pupils (I am speaking of the boys only, for of the girls there is no question), though they do not manifest the earnestness I would like to see, and which a definite, visible aim and a belief in the importance of study tend to excite, yet do their work with good spirit and with reasonable success.

"The school is doing a great deal in teaching the studies which bear most directly upon business life; more than at any time in its history. The new text-book in book-keeping, and the additional time given to that study and to commercial arithmetic, — a year and a half in all, — have stimulated interest in those studies, and are producing very satisfactory results. Classes have been formed in the higher grades and have taken these studies as extras.

"It is hoped that the shortening of the 'Shorter Course of English Study,' from three to two years, may have some effect in keeping boys in school to the end of their second year, and also in making them more industrious and earnest.

"The best method of teaching French has been a matter to which the teachers in that department have devoted a great deal of thought and earnest effort. Four years ago the oral method was introduced as an experiment in the beginning class.

This method has been very successful with small classes of *young* children. When their education in other respects has been wholly suspended, they have been brought by this method to speak and read French and German with ease in a year or two. It has also been very successful with classes of older persons intending to become teachers, and others eager to acquire the language in the shortest time. But in a large public school the conditions are very different. The classes are large, the pupils have several other studies, and but one recitation a day can be given to French. It is not strange, therefore, that the success of the oral method should be less than was hoped for.

"The present method of teaching begins as formerly with the grammar, but it is accompanied by oral instruction in various forms, written work, and translation. The point aimed at is to enable the pupil to read as soon and as much as possible, at the same time as far as possible training his ear to understand the spoken French."

The Training School.

This school requires no extended report. It is believed that the exercises of the small class that graduated last summer were attended with even more than usual interest. That class has been succeeded by one much larger and of excellent promise. It is worthy of notice that the principles, and for the most part the methods, which have given extended fame to the Quincy primary schools, as marking a new departure in education, had for several years previously formed an essential part of the instruction in our Training School, and had been and still are in successful operation in the primary schools under the special direction of the principal, and in the other schools under the tuition of her pupils. It is hoped that a portion of the members of the present class will avail themselves of the post-graduate year which the school now offers them, and during which they may have fit opportunities for practice before assuming the full responsibilities of teachers.

Evening Schools.

Last year the evening schools, with the exception of the one in Ward Three, were not opened, on account of the lack of interest in them which formerly existed. They have not been opened this year, for the same reason. But the chairman of the Committee on Evening Schools, who had special charge of the one in Ward Three last winter, says: —

"There can be no doubt of the benefit of such schools. My experience has been that the men especially take great interest in the work of the school, attend regularly, and make considerable progress. A certain class of boys or young men, obliged by circumstances to leave school young, attend evening schools, and do so, I believe, with an honest purpose to make the best possible use of such opportunities as it affords. Perhaps some who come to amuse or be amused are too easily admitted, or rather are retained longer than the interests of the school can allow. If close supervision is exercised over the evening schools and their work, I am confident that under the management of competent and interested teachers, they will secure in the popular esteem that degree of favor to which the nature of their good works is entitled."

The City School.

The almshouse school has thirty-two scholars, twenty-one of whom were sentenced for truancy and vagrancy. The other nine are the poor children, who have found a home there. The accommodations for this school are ample, and quite as cheerful as any school-room in the city. The citizens may congratulate themselves that the plans were not carried out, at considerable expense, of enlarging and rebuilding for the accommodation of the school.

The different classes are making commendable progress. One lad twelve years of age, committed for vagrancy, who could not read, is making progress rapidly. The deportment of the boys, and their neat appearance, indicate that they are learning other things calculated to improve their morals and strengthen their characters.

Drawing.

The evening drawing schools were continued for the autumn and winter of 1879–80, under the instruction of Messrs. E. Rose and G. E. Woodman, as during the previous year, with marked success. The character of the work merits high commendation. The attendance was as follows : —

Mechanical class, whole number	70
Average attendance	35
Class in Freehand Drawing, whole number	80
Average attendance	36

The term commenced in October last is now in progress, and is taught by Mr. Rose and Mr. Woodman, assisted by Miss Fannie P. Clark, in the freehand class, Mr. Rose giving his attention to the mechanical class, and teaching only two evenings in the week.

At the beginning of the term there were more applicants than could be provided with adequate accommodations, and an effort was made to receive those who would be likely to attend with most regularity. It is hoped that the present term will show an improvement in the average attendance. The committee would bear testimony to the faithfulness and efficiency of the teachers, and the general industry and good progress of the pupils, in this department.

Truant Officers.

The value of truant officers to the schools will be more readily understood by reference to a comparison of statistics in the report of 1879 with those of 1880, by which all can see that the *morale* of the schools is steadily improving from year to year.

Whole number of complaints in	1879	8,634
Whole number of complaints in	1880	8,349
Whole number absent on account of sickness in	1879	1,710
Whole number absent on account of sickness in	1880	1,350
Whole number absent on account of destitution	1879	825
Whole number absent on account of destitution	1880	669
Truants, first offence, in	1879	311
Truants, first offence, in	1880	289

By the above statistics we have 285 less complaints to the officers than last year, 460 less absent on account of sickness, 156 less absent on account of destitution, and 22 less of truants for the first offence. If parents co-operate with the truant officers and teachers, these statistics will show improvement each year.

Examination of Teachers.

Three years ago this board, in its annual report, suggested that the nomination of new teachers should lie over one month on probation, that an opportunity might be given the members of the committee to visit the teachers in the school-room before their nomination should be confirmed by the full board. In 1879, when the rules and regulations were revised, a new committee was created to carry out in a practical manner the method previously suggested. By the new rule all nominations of teachers in the grammar and primary schools are referred to the Committee on Examination of Teachers, and these teachers are on probation until the committee reports upon their qualifications, and recommends that their nomination be approved or rejected.

The committee for the past year reports that twenty-four new teachers have been nominated: fourteen to positions in the grammar schools, and ten in the primary. Twenty-three have been approved. The different members of the Committee on Examination of Teachers have spent about one hundred and ninety hours in this work, equal to thirty-one school days. They have observed carefully the methods, manner, and government of each teacher, and in several cases paid a second visit to the schools. The fact that so large a number of those appointed have successfully passed the scrutiny of this committee speaks well for the care exercised in their selection. It shows that special effort is made to secure the best teachers. With the method now in use, we shall be able to keep our corps of teachers up to a high standard of excellence, while teachers inefficient and poorly qualified will fail to secure a permanent place upon our roll.

School-Houses and Hygiene.

Very few, if any, changes have been made during the past year which have improved the sanitary condition of our school-houses. It is to be regretted that the importance of making the school buildings and surroundings as healthy as possible is not more fully appreciated. One of the greatest causes of complaint at present is the overheating of the school-rooms, and the only remedy to relieve the rooms of the foul and hot atmosphere is by opening the windows. The bad results which follow this course are too well known by all parents having children in our public schools. That this evil is not easy to remedy must be admitted, but we fully believe that if the janitors were under the direct control of the School Committee, who could hold them to a strict accountability for the faithful performance of their work, a very great improvement could be made in the matter of heating, as well as in many other respects.

Salaries.

We have no report from the Committee on Salaries. There has been no change during the year in this department.

Accounts and Estimates.

The Committee on Accounts and Estimates has held monthly meetings to examine and approve bills for salaries, incidental expenses, and for books furnished to indigent children. The Committee on Accounts and Estimates respectfully asks all concerned in the expenditures for books and incidental expenses to economize in the use of all articles for the schools, and to scrutinize with care the giving out of books to indigent scholars.

This committee also makes the estimates for the expenditures of the year, and it requires much care to have these as small as possible, and yet large enough to prevent calling on the City Council for increased appropriations.

Text-Books.

The Committee on Text-Books has made no report, but the committees for the two previous years made very elaborate and

valuable reports touching methods which have been adopted and are now in successful operation.

During the year we have made few changes in text-books. It is the policy of the board to introduce changes slowly, and only when books presented have been examined carefully, and when it shall clearly appear to be for the best interest of the schools.

Examinations and Promotions.

The Committee on Examinations and Promotions has attended to its duty as prescribed in the rules of the board, following out the method so clearly set forth in the last two annual reports.

Music.

The Committee on Music has presented a very full report, of which we give the leading points. The teaching of vocal music in our schools has always been objected to by those who would limit a common-school education to the "three R's." There are also many persons of intelligence and refinement who regard this branch of study as of very slight importance. They have never taken the pains to ascertain how much of real scientific instruction is given, what is aimed at, or how far success is attained.

A careful examination of the methods employed, and of their results, would show that music is taught in the schools upon the same principle on which arithmetic, for instance, is taught.

The Committee on Music has examined the work in this department, by being present at lessons given in each of the grammar and in several of the primary schools, and it would unhesitatingly report that the instruction in music is as thorough and as successful as in any branch taught in our schools. The pupils learn to sing, not "by rote," but accurately at sight in three or four parts, and to write correctly and readily in the only universal language, that of music. In short, the foundation is laid for whatever they may desire to accomplish in music in the future.

Believing that the ennobling and elevating influences of whatever is beautiful about us are more than "the meat which per-

isheth," we are deeply grateful to the wisdom of our legislators in providing that vocal music may be taught in the public schools.

New Schools.

In April last, a portion of the town of Belmont was annexed to Cambridge. The district thus acquired contained two school-houses with two rooms in each. These four schools have one hundred and thirty pupils in attendance. There are probably one hundred and fifty or sixty children over five years of age in this district. The teachers in charge of the schools when the territory became a part of Cambridge have been retained by this board.

The year has been marked by no special or unusual change, either in teachers or methods. Our corps of teachers remains the same as last year, with the exception of twenty-four new ones appointed to positions made vacant by resignations and death. As much change as this is to be expected in a city employing so large a number of teachers.

In April last, one of our teachers, Miss Mary Ann Tarbell, passed to the higher life, after a service in the schools of this city of more than thirty years. Her term of service was unusually long, and as a teacher she was highly respected by her associates, and eminently successful in her work. She has left a record of faithful service, and has exerted an influence upon many of our children which will be felt in long years to come.

Taking our schools as a whole, the instruction has been excellent, while the methods now in use are eminently practical. Those who are qualified to understand and comprehend the object of public schools will not hesitate for a moment to commend, rather than to criticise and find fault with, the system of instruction in the schools of the city. Yet there are those who claim that the public schools are not practical, because boys and girls are not fitted at the age of twelve or seventeen years to leave the school-room, enter a counting-room to keep a set of books, or to enter the schools as teachers. They do not consider that youth needs some practical experience, or special

instruction, before being able to assume duties and responsibilities of this nature.

We do not expect college graduates, who are much older than any graduate of a grammar or high school, to enter a profession without some special study in law, medicine, or theology. Why, then, should we expect graduates of grammar or high schools to enter the counting-room, or into business, without some special preparation or experience in those lines of work? Let it be understood that the public school is a mighty underlying power, a basis upon which the after life, whatever may be the profession or occupation chosen, must rest. The systematic drill, from the time children enter the primary school until they graduate from the high school, develops the mind, builds up an intellectual life, and fits them, so far as intelligence is concerned, to enter upon the duties and responsibilities of citizens. They acquire in these thirteen years an amount of discipline and knowledge which could never be attained in any other way, and the teaching is such that the boy will very readily *learn* the methods and principles of business, and the girl very soon acquires the experience to make her a successful teacher, or fit her for any position she may be called to fill.

It must be acknowledged that the efficiency of our school system is in a large measure due to the suggestions and supervision of our superintendent. Success in any system requires unity of action. The superintendent is in a position to bring the schools into harmony with the course of instruction provided by the board and he is also able to direct the teachers to the best method of teaching the branches of study introduced into the course. The importance of having a trained educator give his entire time and best thought to the interest and well-being of the schools cannot be overestimated.

In closing this report, we commend the schools to the interest and sympathy of the citizens as well as to those who have the immediate supervision of them. If the public would be more interested in securing accurate information by personal visitation, by actual examination of the methods of instruction and discipline, there would be less criticism upon school work, and less crude and impracticable advice given. The people, the

City Council, and the committee should unite their efforts to make our schools in every respect the best, or equal to the best in the Commonwealth.

JAMES M. W. HALL, *Chairman, ex officio.*
HORACE E. SCUDDER,
JOHN WILSON,
ANDREW P. PEABODY,
PHEBE M. KENDALL,
JAMES H. HALL,
SUMNER ALBEE,
GEORGE A. COBURN,
JOHN O'BRIEN,
OTIS S. BROWN,
SARAH S. JACOBS,
WILLIAM H. ORCUTT,
ASA P. MORSE,
WM. FOX RICHARDSON,
EDMUND H. STEVENS,
WILLIAM A. START,
} *School Committee.*

TABULAR VIEW

OF

THE PUBLIC SCHOOLS OF CAMBRIDGE,

JANUARY 1, 1881.

Name of School.	Teachers.	Salary.	No. of Scholars, Jan. 1, 1881.
High School,	Lyman R. Williston.....	$2,800	462
	William F. Bradbury	2,500	
	John Orne, Jr.....	1,700	
	Theodore P. Adams.....	1,700	
	Solon F. Whitney.....	1,700	
	Mary F. Peirce.....	900	
	Emma A. Scudder	800	
	Hannah Gleason	800	
	Emma F. Munroe.....	800	
	Mary C. C. Goddard	800	
	Julia W. Keeler	800	
	Margarette M. Leighton..	800	
Allston Grammar,	Benjamin W. Roberts....	1,900	491
	Lizzie B. Winnett.....	700	
	Emily R. Pitkin.....	620	
	Hannah L. Hill	620	
	Ida G. Smith.....	620	
	Nettie Sargent	620	
	Caroline Close.....	620	
	Lizzie M. Dickson.....	620	
	Emma A. Eaton.....	620	
	Mary K. Bush.....	520	
	Melissa M. McKinley	520	
	Carrie M. Williams	520	
Corlett Grammar,	Fannie P. Browning	620	56
	Emma C. Edson.....	500	
Harvard Grammar,	Aaron B. Magoun.....	1,900	572
	Ada H. Wellington	700	
	Margaret B. Wellington..	620	
	Susan F. Athearn.....	620	
	Margaret R. Hodgkins....	620	
	Annie M. Leland	620	
	Susan E. Merrill.....	620	
	Emily F. Damon.....	620	
	Sarah E. Golden.....	620	
	Mary F. Emerson.....	620	
	N. Maria Stevens.....	620	
	Estelle J. French	620	
	Myra S. Ellis.....	620	
	M. Leona Sanger	200	
Putnam Grammar,	James S. Barrell.....	1,900	440
	Eliza M. Hussey.....	700	
	Anna B. Josselyn	620	
	Addie Stone.....	620	

Teachers with a salary of $200 have charge of classes that are not full.

TABULAR VIEW OF THE PUBLIC SCHOOLS. — *Continued.*

Name of School.	Teachers.	Salary.	No. of Scholars, Jan 1, 1881.
Putnam Gram'r (*con.*)	Augusta G. Mirick.....	$620	
	Annie Knapp.....	620	
	Eliza S. Getchell.....	620	
	Maria E. Spare.....	620	
	C. E. Doran.....	620	
	Eliza A. Paddock.....	520	
	Annie L. Savage.....	520	
Shepard Grammar,	Edward O. Grover.....	1,900	420
	Ellen M. Jennings.....	700	
	Julia H. Osgood.....	620	
	Sarah A. Rand.....	620	
	Evelyn J. Locke.....	570	
	Emily F. Fessenden.....	620	
	Cora M. Wheeler.....	620	
	Ruth E. Lander.....	620	
	Dana A. Evelyth.....	620	
	Anna Osgood.....	620	
	Nellie A. Hutchins.....	620	
Thorndike Grammar,	Ruel H. Fletcher.....	1,900	542
	Ellen M. Parker.....	700	
	Martha A. Martin.....	620	
	Mary E. Nason.....	620	
	Isabella B. Tenney.....	620	
	Ella W. Clark.....	620	
	Grace W. Fletcher.....	620	
	Emma A. Hopkins.....	620	
	Abbie A. K. Howard.....	620	
	Lydia A. Whitcher.....	620	
	Abby S. Taylor.....	620	
	Elizabeth P. Regal.....	620	
	Mary A A. McCarthy....	570	
Washington Grammar,	Daniel Mansfield.....	1,900	588
	Caroline J. Dresser.....	700	
	Lucy A. Downing.....	620	
	Adeline M. Ireson.....	620	
	Abby M. Webb.....	620	
	Adelaide A. Keeler.....	620	
	Adelaide A. Keith.....	620	
	Adelia Dunham.....	620	
	Emma P. Eaton.....	620	
	Caroline H. Hazeltine....	620	
	Carrie A. Cooke.....	620	
	Mary A. Wheeler.....	570	
	Susan E. Wyeth.....	620	
	Mary H. Hanks.....	520	
	Ellen M. Jennings.....	520	
Webster Grammar,	John D. Billings.....	1,900	642
	Lizzie C. Capen.....	700	
	Gertrude E. Hale.....	620	
	Esther F. Hannum.....	620	
	Mary E. Towle.....	620	
	Charlotte M. Chase.....	620	
	Anna S. Lamson.....	620	
	Hattie E. Wallis.....	520	
	Jennie M. Osgood.....	520	
	Clara E. Matchett.....	620	
	Carrie M. Kingman.....	620	
	Alice Gray.....	620	
	Marion H. Burnham.....	620	

TABULAR VIEW OF THE PUBLIC SCHOOLS. — *Continued.*

Name of School.	Teachers.	Salary.	No. of Scholars, Jan. 1, 1881.
Webster Gram'r (*con.*)	Carrie W. Osgood	$620	
	Ella C. Buttrick	620	
	Lillie A. Woods.....	570	
Boardman Primary,	Mary Agnes Lewis.....	600	257
	Sarah E. Stewart	580	
	Augusta L. Balch.....	580	
	S. N. Chamberlain	580	
	Evelyn A. Sawyer	580	
Bridge Primary,	Elizabeth E. Dallinger...	600	76
	Emily C. Dallinger.....	580	
Cushing Primary,	Isadore I. Foster.....	500	74
	Annie B. Freeman	400	
Dana Primary,	Maria F. Williams.....	600	84
	Abby A. Lewis	580	
Dunster Primary,	Sarah B. Waitt.....	580	62
Felton Primary,	Georgiana L. Backus.....	600	111
	Frances Fabyan	580	
	Sarah J. Gunnison.....	200	
Gannett Primary,	Sarah J. Davis	600	181
	Anna M. Jones.....	580	
	Ellen N. Leighton	580	
	Mary A. Rady.....	400	
Gore Primary,	Frances E. Pendexter....	600	409
	Addie M. Bettinson.....	580	
	Mary A. Bourne.....	580	
	Nellie L. Pike.....	580	
	Sarah D. Graham.....	580	
	Mary A. Shepard.....	580	
	Mary E. Mulloney.....	580	
	Maria J. Bacon.....	500	
Harvard Primary,	Helen M. Ward.....	600	94
	Ellen A. Cheney.....	580	
Holmes Primary,	Marianne M. Webb.....	600	160
	Mary L. Bullard.....	580	
	Louisa G. Matchett.....	580	
	Ellen M. Cyr.....	400	
Mason Primary,	M. Lizzie Evans.....	600	110
	Alma A. Smith.....	580	
Otis Primary,	Luvia Goodnow.....	600	421
	Martha H. Butler.....	580	
	Kate F. Wellington.....	580	
	Carrie H. Smith.....	580	
	Mary E. Smallidge	580	
	Fannie Allen.....	580	
	Ellen C. Walsh.....	580	
	Josephine M. Doherty....	580	
Putnam Primary,	Nellie F. Ball.....	580	59
Quincy Primary,	Charlotte E. Jewell.....	600	98
	Lucy C. Wyeth.....	580	
Reed Primary,	Hattie N. Keyes.....	600	70
	Margaret Kidd.....	400	
Riverside Primary,	Elizabeth A. Tower.....	600	202
	M. Louise Akerman.....	580	
	Florence M. Hayward....	580	
	Amanda M. Alger.....	500	
Sargent Primary,	Frances J. Harrod.....	600	181
	Mary A. Brown.....	580	
	Eliza J. Mitchell.....	200	
	Mary E. Woodman.....	400	

TABULAR VIEW OF THE PUBLIC SCHOOLS. — *Continued.*

Name of School.	Teachers.	Salary.	No. of Scholars, Jan. 1, 1881.
Willard Primary,	Amelia Wright.....	$600	438
	Mary E. Sawyer.....	580	
	Kate M. Lowell	580	
	Evelina Brooks.....	580	
	Laura Wright.....	580	
	Grace R. Woodward.....	580	
	Louise W. Harris.....	580	
	Hattie A. Hamlen.....	580	
	Emma C. Otis.....	400	
Wyman Primary,	Fannie E. M. Dennis....	600	198
	Letitia M. Dennis.....	580	
	Charlotte A. Ewell.....	580	
	Martha C. Dickman.....	580	
Training School,	Anna C. Sullivan.....	900	237 *
	Ella C. Whitney	620	
	Emma B. Alley.....	580	
	Jenny Prescott	580	
	Sarah M. Jaques.....	500	
	Mary H. Ross.....	200	
City School,	Harriet A. Butler.....	620	31

TEACHER OF SINGING. — Nathan Lincoln $1,500

SUPERINTENDENT OF SCHOOLS. — Francis Cogswell 2,700

SUMMARY.

Number of pupils in High School	462
" " Grammar Schools	3,795
" " Primary Schools	3,509
	7,766

COST OF INSTRUCTION.

High School	$16,100 00	for each pupil	$34 84
Grammar Schools	66,780 00	" " "	17 59
Primary Schools	41,640 00	" " "	11 87
Music	1,500 00		
Salary of Superintendent .	2,700 00		
	$128,720 00	for each pupil	$16 70

Number of pupils belonging to Public Schools, Jan. 1, 1881	7,766
" " " " " Jan. 1, 1880	7,480
Increase	286

Average annual increase of pupils from 1860 to 1874 inclusive	246
Decrease of pupils, 1875	268
Increase of pupils, 1876	6
Decrease of pupils, 1877	81
" " 1878	50
Increase of pupils, 1879	57
" " 1880	286

Number of schools	30
" " teachers	183

* Including the Training Class (14), a Grammar Class (44), and Primary Classes (179).

REPORT

OF

THE SUPERINTENDENT OF SCHOOLS.

To the School Committee of Cambridge:

I RESPECTFULLY submit the following as my Report for the year ending Dec. 31, 1880, it being my Sixth Report, and the Twelfth Annual Report of the Superintendent of Public Schools.

SUMMARY OF STATISTICS.

For the School Year ending Dec. 31, 1880.

I. — POPULATION.

Population of Cambridge by the State census for 1880	52,740
The number of children in the city between five and fifteen years of age, May 1, 1880, as reported by the officers appointed to ascertain the fact	9,390

II. — SCHOOLS.

1 High School.	1 Training School.
8 Grammar Schools.	1 Evening School.
20 Primary Schools.	2 Evening Drawing Schools.

Whole number of Day and Evening Schools 33

III. — SCHOOLHOUSES.

For the High School	1
For the Grammar Schools	8
For the Primary Schools, including Training School	18

IV. — Teachers.

Number of teachers in High School	12
Male teachers, 5; female teachers, 7.	
Number of teachers in Grammar Schools	94
Male teachers, 7; female teachers, 87.	
Number of teachers in Primary Schools, including Principal of Training School	75
Number of teachers in Evening Schools	7
Number of teachers in Evening Drawing Schools	4
Whole number of teachers in Day Schools, including teacher of music	182
Number of resignations during the year	15
Number of permanent appointments	23
Number of temporary appointments	10

V. — Pupils.

[These statistics do not include the schools in the Belmont district, as they were Cambridge schools only about two months before the close of the school year.]

Number of different pupils registered in the Day Schools during the year	8,537
Average number of pupils belonging to the Day Schools during the year	7,175
Average daily attendance of pupils in the Day Schools	6,614
Per cent of attendance in the Day Schools	92.2
Average number of pupils belonging to the High School	440
Average daily attendance in High School	411
Per cent of attendance in High School	93.3
Average number of pupils belonging to Grammar Schools	3,439
Average daily attendance of pupils in Grammar Schools	3,205
Per cent of attendance in Grammar Schools	93.1
Average number of pupils belonging to Primary Schools	3,287
Average daily attendance in Primary Schools	2,990
Per cent of attendance in Primary Schools	91
Number of different pupils belonging to Evening Schools	163
Average attendance in Evening Schools	63
Number of different pupils belonging to Evening Drawing Schools	150
Average attendance in Evening Drawing Schools	71
Number of pupils over fifteen years of age belonging to the Day Schools, May, 1880	603
Number of pupils graduated from Primary Schools, July, 1880	856
Number of pupils graduated from Grammar Schools, July, 1880	230
Number of pupils graduated from High School, July, 1880	51

Number of pupils from High School admitted to college, July, 1880; boys, 10; girls, 4 14
Number of pupils graduated from Training School, July, 1880 . 8
Number of pupils admitted to Grammar Schools, September, 1880 864
Number of pupils admitted to High School, September, 1880 . 155
Number of pupils admitted to Training School, September, 1880, 19
Whole number of Private Schools 20
Number of pupils in Private Schools 1,748

Table Showing the Number in Each Course in the High School, December, 1880.

YEAR.	Classical Course.	Complete English.	Shorter English.	Number of Divisions.
Fifth	22	..	..	1
Fourth	24	47	..	3
Third	23	47	16	4
Second	103		20	5
First	131		29	6

For the first two years the Classical and English Courses are identical.

Table Showing the Number in Each Class in the High School, December, 1880.

YEAR.	Boys.	Girls.	Total.	Per cent.
Fifth	16	6	22	.047
Fourth	20	51	71	.153
Third	43	43	86	.186
Second	55	68	123	.244
First	68	92	160	.367
Total	202	260	462	

Table Showing the Number in Each Class in the Grammar Schools, December, 1880.

[The numbers in this and the following table include only those scholars who were present at some session during the first two weeks of December; while those in the "Tabular View" include all who belonged to the schools, though absent on account of sickness or for other cause.]

Class.	Boys.	Girls.	Total.	Per cent.
First	111	123	234	.062
Second	196	221	417	.111
Third	293	283	576	.153
Fourth	406	389	795	.211
Fifth	343	360	703	.187
Sixth	542	492	1,034	.275
Total	1,891	1,868	3,759	

Table Showing the Number in Each Class in the Primary Schools, December, 1880.

Class.	Boys.	Girls.	Total.	Per cent.
First	450	487	937	.275
Second	510	510	1,020	.299
Third	780	669	1,449	.425
Total	1,740	1,666	3,406	

The statutes require that "the School Committee shall annually, in the month of May, ascertain, or cause to be ascertained, the names and ages of all persons belonging to their respective towns and cities on the first day of May, between the ages of five and fifteen years, and make a record thereof."

The following is a summary of the returns for 1880 made by the officers appointed to ascertain the required facts: —

Number of children in the city between five and fifteen years of age, as reported by the officers	9,390
Number in Public Schools between five and fifteen years of age, as reported by the officers	6,785
Number in Private Schools between five and fifteen years of age, as reported by the officers	1,493
Number not attending school between five and eight years of age, as reported by the officers	652
Number not attending school between eight and thirteen years of age, as reported by the officers	164
Number not attending school between thirteen and fifteen years of age, as reported by the officers	296
Whole number not attending school between five and fifteen years of age, as reported by the officers	1,112

VI. — Finances.

Cost of instruction in Day Schools	$130,371 75
Text-books and stationery for Day Schools	3,450 87
Incidental expenses for Day Schools	1,369 31
Cost of Evening Schools	439 00
Cost of Evening Drawing Schools	705 50
Care and repairs of schoolhouses	18,775 63
Amount expended for schoolhouses and land in Belmont district	6,436 00
Amount expended for land for schoolhouse in Ward Three,	1,500 00
Total expenditures for all school purposes	$163,048 06

Deducting receipts from the Hopkins Fund ($767.72) and for tuition of non-resident pupils ($556), actual costs of the schools to the city	$161,724 34
Assessed value of real and personal estate, May, 1880	$49,629,060 00
Ratio of expenses for school purposes to the valuation of 1880	.0032

Remarks on the Statistics.

For four years beginning Jan. 1, 1876, there was an average annual decrease in the number of pupils in our schools of 17; but during the past year there has been an increase of 156, not including the pupils in the Belmont district, the whole increase being 286. Notwithstanding this increase in the number of

pupils, there has been a decrease in the cost of instruction of two thousand dollars ($2,198.74). The total expenditures for all school purposes have been about five hundred dollars ($544.15) more than for 1879.

If, however, we exclude the expenses in the Belmont district, and the cost of land for a schoolhouse in Ward III., there will be a decrease in the total expenditures from last year of more than eight thousand dollars ($8,449.85).

At the beginning of the year 1876, the number of pupils was 218 less, and that of teachers 2 more than at the present time. The total expenditures for all school purposes for the preceding year (1875) were nearly two hundred sixty-three thousand dollars ($262,935.15). Forty-four thousand dollars of this amount, however, were spent for new schoolhouses and alterations. From that time there has been an annual decrease in the cost of the schools, the total cost for the past year being about one hundred sixty-three thousand dollars ($163,048.06). It is not likely, with an increasing school population, and with a necessity for new schoolhouses, that this decrease will continue, but rather that the expenditures another year will exceed those for the past year.

School Accommodations.

One year ago the crowded state of the schools in Ward III. made it necessary to ask for additional school accommodations in that part of the city. The School Committee recommended to the City Council the erection of a new schoolhouse, rather than the finishing of the third story in the Gore building. After carefully considering the subject, the City Council adopted the recommendation, bought a piece of land 100 feet square on Charles Street, near Sixth, and at once contracted for the erection of a building 62 feet long, 44 feet wide, and two stories high, each story to contain two school-rooms, with dressing-rooms and ample hall-room. The cost of the land was $1,500; the building, which is to be of wood, will cost about $6,500. The foundation is already laid, and the house will probably be completed by the middle of April. During the coming year a new schoolhouse will be needed in Ward IV.

It can be located, I think, on land now owned by the city near Howard Street.

Examination of Teachers.

One year ago a committee on the examination of teachers was added to the committees of the Board. I look upon this as the most important measure adopted by the committee since my connection with the schools as superintendent. Too much care cannot be exercised in the appointment of teachers, for it is the teacher who makes the school.

The rule defining the duties of this committee is as follows: "Nominations for the grammar and primary schools shall be referred to this committee, who shall inquire and report as to the qualifications of the nominee before final action thereon is taken by the Board." Information as to the qualifications of new teachers is obtained in two ways: first, by ascertaining what has been their training for the work of teaching, and in case they have taught, what has been their success; second, by observing their methods of teaching and of government after they have accepted positions in our own schools. During the past year there have been more than twenty new appointments, making the work of this committee quite burdensome. I fear that its members will in time become weary in well-doing, or rather that the amount of time required for the discharge of their duties will be greater than they may be willing to spare from their business or professional callings. I therefore suggest that the Board be divided into three subcommittees on the examination of teachers, each subcommittee to consist of one from each ward, the nominations to be referred to them in turn. To the rule defining the duties of the committee, I would add the following: This committee shall also inquire and report to the Board in executive session as to the success of any teacher in the employment of the city, when requested thus to do by any member of the School Committee, or by the superintendent of schools.

Colored Teachers.

A few weeks since, I received a letter from a gentleman requesting my "views and position relative to the employment

of one or more of the young colored women who are applicants for the position of teacher in our public schools." The writer thinks that "these young ladies have not been fairly treated by the School Committee, and that it has been solely because of their color."

He expresses the "determination not to rest until justice has been done them," but at the same time desires "to treat the matter with fairness and courtesy toward all." Receiving the letter in the spirit in which it was evidently written, I replied at my earliest convenience. As what I wrote is of personal interest to the committee, and may be of interest to the public, I have thought it best to present it as a part of this report. The reply was as follows: —

OFFICE OF SUPERINTENDENT OF SCHOOLS,
CAMBRIDGE, Dec. 31, 1880.

Dear Sir: — No apology was needed in writing to me upon the subject of your letter of the 16th inst. The subject ought to be discussed, and the way prepared for the accomplishment of the object you desire.

It is of no use to deny that even to-day a prejudice exists towards the colored race. It does not exist, however, to any extent among the more intelligent part of the community.

With our School Committee it is not personal feeling that has prevented the appointment of either of the colored graduates of our Training School to the position of teacher. So far as I am concerned, I have repeatedly said that I should be perfectly willing to have my own daughter under the tuition of either of them, not doubting that she would be well taught and kindly dealt with.

Why then are these young ladies not teaching in this city? Simply because, in my opinion, our committee have felt that the prejudice still existing among that part of the community most dependent upon free schools for the education of their children was too strong to justify their appointment. Schools are maintained, not for the purpose of giving employment to the educated, but for the purpose of educating and training the young. No person, black or white, rich or poor, a graduate of one school or another, a resident of one city or another, has any *personal* claim to the position of teacher; and school committees have no moral right to select persons for that position who in their opinion will not be the most serviceable to the children placed under their care.

It may be that our committee are behind public sentiment in regard to the appointment of colored teachers. I hope they are; and that the time has come when the experiment of appointing them can be successfully tried here in Cambridge.

Abraham Lincoln was a sincere friend to the slave; but had he issued

his Proclamation of Emancipation at an earlier date than he did, it is more than probable that the slaves would still be in bondage.

The young ladies to whom reference has been made have been employed as substitutes in several of the schools. I wish they might have had more frequent opportunities of this kind. I also wish they might have been so situated as to be able to avail themselves of the privilege (granted by the School Committee one year ago to the graduates of the Training School) of acting, under the direction of the Training School committee and the superintendent, as assistant teachers in connection with the regular teachers in any school in the city. To be sure, they would not have received pay for this service, but their presence in the school-room as associate teachers would have been the surest and quickest way to bring about their appointment as permanent teachers.

The question whether colored persons shall be teachers in our public schools is only one of the many questions relating to the rights of the colored race, or rather of every race.

One right after another has been secured, one position after another gained; and I have no doubt that the time is near when public sentiment will not only tolerate, but demand the appointment of colored teachers as an act of simple justice.

Very truly yours,

FRANCIS COGSWELL.

Two Hundred and Fiftieth Anniversary.

The teachers and pupils of our public schools who were present at Sanders Theatre on the morning of the two hundred and fiftieth anniversary of the settlement of Cambridge, will long remember the occasion as one affording great pleasure; and I take this opportunity to thank his Honor, Mayor Hall, and the committee who had in charge the arrangements for the day, for remembering the schools on the occasion.

Although a full report of the celebration has been given in the Cambridge papers, and will soon appear in book form, it seems to me that a brief account of that part of the celebration especially designed for the children should find a place either in the report of the School Committee or in that of the superintendent.

The children's celebration, as it is called, was held in Sanders Theatre. Nearly twelve hundred children, members of the three upper classes in the grammar schools, accompanied by their teachers, were present, filling the entire body of the house and a part of the stage. Those seated on the stage, one hundred and fifty in number, formed a chorus under the direc-

tion of our singing-master, Mr. Lincoln. Parents and friends of the children to the number of more than six hundred occupied the galleries, while on the stage, besides the singers and an orchestra, were the members of the city government and of the School Committee, the invited guests of the city, and the distinguished persons who were to speak on the occasion. The exercises began with prayer by Rev. Dr. Peabody. Mayor Hall in his opening address referred to the public schools as follows: —

"What could more appropriately introduce the day we observe than a service by the scholars of our public schools? That institution which our fathers established side by side with the church; that which has filled these two hundred and fifty years with so much of blessing and hope, and which shall be one of the strong bulwarks of our Republic for generations yet to be. Should the time ever come when either the church or the public school should be deemed of little importance, we may well write in larger letters on our proclamations, 'God save the Commonwealth of Massachusetts.'"

President Eliot closed his remarks with these words: —

"History teaches that the men whose influence is deepest, whose works and deeds and lives are of dearest memory, are poets. Every week in yonder Sever Hall hundreds of young Americans come together to listen with delight to the works of poets who lived thousands of years ago. And so in generations to come the works of Cambridge poets will be familiar and dear to millions of our descendants. I hope, children, you all know the three houses where these Cambridge poets have lived. I am sure you know the house where Washington once lived, where Mr. Longfellow now lives, on Brattle Street. Go and see the house on Elmwood Avenue where Mr. Lowell lives; and go and see, too, the house behind the new gymnasium where Dr. Holmes was born. These houses are of wood; they must disappear. Be sure that you will be able to tell your grandchildren nothing which will so interest them as that you knew the houses where Longfellow, Holmes, and Lowell lived when you were children; and more than that, tell them that you saw two of those poets, Longfellow and Holmes, sitting beside each other on the stage in Sanders Theatre, when they were more than seventy years old, in the year when Lowell was the Minister of the United States in England, — the year when we celebrated the two hundred and fiftieth anniversary of the foundation of Cambridge."

After President Eliot's remarks, an unexpected pleasure was given to all present by Mr. Longfellow's consenting to say a few words to the children. He spoke as follows: —

"My Dear Young Friends: I do not rise to make an address to you, but to excuse myself from making one. I know the proverb says, that he who excuses himself accuses himself, — and I am willing on this occasion to accuse myself, for I feel very much as I suppose some of you do when you are suddenly called upon in your class-room, and are obliged to say that you are not prepared. I am glad to see your faces and to hear your voices. I am glad to have this opportunity of thanking you in prose, as I have already done in verse, for the beautiful present you made me some two years ago. Perhaps some of you have forgotten it, but I have not; and I am afraid — yes, I am afraid that fifty years hence, when you celebrate the three hundredth anniversary of this occasion, this day and all that belongs to it will have passed from your memory: for an English philosopher has said that the ideas as well as children of our youth often die before us, and our minds represent to us those tombs to which we are approaching, where, though the brass and marble remain, yet the inscriptions are effaced by time, and the imagery moulders away."

Dr. Holmes, after a few words of explanation, read a poem on "Our Home, Our Country." This poem has already been selected by many of our teachers as the one to be committed to memory by their pupils during the coming term.

Singing by the children and music by the orchestra were interspersed with the other exercises.

Fifty years from now, on the occasion of the three hundredth anniversary of the settlement of Cambridge, I have no doubt some one of these twelve hundred children will speak of what he saw and heard at Sanders Theatre, on the 28th of December, 1880.

Miscellaneous.

Fifteen of the names on the pay-roll one year ago are not on it at the present time. Two teachers have died during the year, Miss Eunice W. Field and Miss Mary Ann Tarbell. Both were faithful, conscientious teachers. Miss Tarbell's term of service was unusually long, covering a period of nearly thirty-six years, and still she retained to the last all the freshness and enthusiasm of a young teacher. At the close of the school year, two of the master's assistants resigned, one to be married, and the other to accept the position of principal in a grammar school at a higher salary.

The city lost by these resignations two efficient teachers. While it may not be desirable to offer any inducements which may keep a young lady from married life, it is a question

whether Cambridge can afford to allow other cities to deprive it of the services of such teachers as Miss Fannie A. Cooke.

By the annexation of a part of Belmont to Cambridge in April last, two schools, under the charge of four teachers, were added to those in our city. I found these schools in good condition, but not graded so closely as our own. No change was made, however, till September, when the primary and grammar departments were separated: the primary occupying the schoolhouse on Cushing Street; the grammar, the one on Holworthy Street. At a recent meeting of the School Committee the following order was adopted: "That the school building on Cushing Street, in the territory recently annexed from Belmont, be named the Cushing School; and that the one on Holworthy Street, in the same district, be named the Corlett School, to commemorate the services of the first schoolmaster in Cambridge, Elijah Corlett, who for half a century was the sole grammar master in town." These schoolhouses, with the land, cost the city about $6,500.

During the year about forty of our teachers formed themselves into a class for the purpose of receiving instruction in illustrative drawing from Miss W. Bertha Hintz, teacher of that branch in the Boston Normal School. I was gratified to find so many ready to spend time and money that they might more effectively do their work in the school-room. The Committee on Public Property very kindly granted them the free use of a room, warmed, lighted, and taken care of. I feel it due both to them and to these teachers that I bring these facts to your notice.

The condition of the High School and of the Training School has been reported on by the respective committees of these schools. The work in the grammar and primary schools has gone forward with at least the usual success. More attention, however, has been given to the addition of columns of figures, with the gratifying result of more than fifty per cent over that of the preceding year in a test examination. The practice of committing to memory select pieces of poetry and prose has been continued, and I am more and more convinced that it is one of the most profitable exercises in the schools.

A limited supply of the following books has been bought dur-

ing the year for supplementary reading: "Second Readers," "Poetry for Children," "Young Folks' Book of Poetry," "Stories of American History," "Old Times in the Colony," "Graded Selections for Memorizing," and "Graded Supplementary Reading"; also Nos. 6 and 7 of the "Cambridge Series of Information Cards for Schools."

In the management of our schools, our teachers are deserving of great praise. Not a single complaint has been brought to the notice of the School Committee as a Board during the year, and in only one or two instances has the ward committee been called together to consider any case of disobedience.

All other difficulties not settled by the teacher have been arranged by the subcommittee of the school, or by the superintendent. Our teachers are enabled thus successfully to carry on their schools because they have in so large degree the confidence and co-operation of parents.

FRANCIS COGSWELL,
Superintendent of Public Schools.

VALEDICTORY ADDRESS

OF THE

HON. JAMES M. W. HALL, MAYOR,

DELIVERED WEDNESDAY EVENING, DEC. 29, 1880.

Gentlemen of the City Council: —

As our official term closes, it is fitting that we should review the year, and have a clearer idea of the condition of our city affairs, as managed by us, by a comparison of matters as we leave them and as we received them. In doing this I realize the somewhat delicate position in which I am placed, in attempting anything of the kind without trenching on ground that properly belongs to my successor. It will be my endeavor to avoid, as far as possible, any embarrassment to him of this kind.

The year commenced with a favorable condition of affairs financially, and with a prospect that we could not improve on them, certainly so far as economical management could go; and with what seemed almost a certainty that the different departments would, from the advance in merchandise of all descriptions, have to be run at an increased cost. I congratulate you on the most satisfactory results of the year, showing nearly all the departments managed at less expense than the year previous.

I refer you to the following evidence of this: —

COMPARATIVE COST OF DEPARTMENTS.

Fire Department, 1879, $51,664.62; 1880, $61,955.75. The tax on hydrants was increased this year from $11 to $30, making $11,217 charged Fire Department over last year. Deducting this, the cost of the department this year is $50,738.75, or $925,87 less than 1879; and this with the additional expense

of a part of the year involved by the cost of maintaining the chemical engine.

Police Department, 1879, $59,848.49; 1880, $56,083.61: showing a saving of $3,764.88.

Street Department (repairs), 1879, $56,370.52; 1880, $55,-535.86, being $844.66 less than last year; and during the year one of the five notes given for the Watertown gravel bank, $2,717.46, has been paid and charged to this account.

These are the three most expensive departments coming under the immediate control of the City Council; and it is gratifying to know that at a reduced cost each has been maintained with more protection in Police and Fire Departments than ever before, and with no lack of care to keep each to the standard required for the best interests of the city.

Looking at the other departments coming directly under the control of the City Council (engineering, incidental expenses, lamps, sewers [maintenance], shade trees and public parks, care and repair of schoolhouses, stationery and printing, and care of surrendered estates), we find the total cost $99,372.80, against $97,103.74 last year; and this with the cost of annexing a part of Belmont ($4,075), and a large expense of repairing the collapsed sewer on Jay Street, besides $7,936 paid as by legislative requirement for schoolhouses formerly in Belmont, removing one to a lot of land within our territory, and the lot of land purchased for a schoolhouse lot in Ward Three.

The advantages of the annexation of the territory adjoining Fresh Pond, formerly in Belmont, have been presented by the Water Board, and it is not necessary to remark further on this point; except to say that an arrangement was made, at the suggestion of the Committee on Claims to the Board of Assessors, on the question of abatement of taxes to citizens or tax-payers in the newly annexed territory (referred to the Committee on Claims by the City Council), so that the citizens of the territory annexed, and annexed for the sole purpose of protecting Fresh Pond, shall not suffer by largely increased taxes, at least for the present, and be forced to assist in paying a debt which they did not help to incur and derived no benefit from. In doing this I am confident we are but honorably discharging what is due, although by no legal requirement, and

what those citizens were led to believe would be done, though no promise was or could legally be made.

The temporary loans have been negotiated at rates below what was anticipated at the commencement of the year, making a saving over last year of $569.26 in interest. The last loan was made at 2⅞ per cent, the lowest rate ever paid by the city.

The amount of back taxes collected this year is $88,510.12, against $145,484.61 last year; which has been a heavy difference to overcome in order to leave anything in the treasury at the end of the year; and yet with all this, and a reduction of taxation of $1.00 per thousand (without increasing the valuations, but on the contrary reducing them, as the report of the Finance Committee shows), we have the pleasure of handing over to the next city government $29,742.47 to commence their financial year with, our bills paid and no debt incurred. Several sales of surrendered estates have been made, at much less than what was paid for them, but the city will in the end be better off in receiving taxes on them and avoiding any more outlay. The Committee on Public Property has handled these estates with great care and diligence.

Only a portion of the amount of sale of surrendered estates has come into our financial year, or $14,888.10. By the report of the Committee on Public Property, the amount of sales is $38,724.10, the balances due being secured by mortgages covered by insurance policies on the property.

During the early part of my administration I signed a warrant for $18,893.93 to pay for the Bancroft estate, for which a judgment of the Court had been entered last year. This property had decayed to such an extent as to be of little value, compared with the amount decreed to be paid. The purchase of the Mill Pond property, in Ward 4, has added to the real estate of the city; but it promises to be an exception to the rule regarding purchase of real estate by the city, — a good investment. The location, the amount of territory purchased (some five acres), and the price paid, $10,000, besides the settlement of all suits against the city, in connection with this property, would seem to promise that the city will eventually realize something handsome from the investment, if judiciously managed.

I have not thought it necessary to repeat the detailed condition of the unavailable assets of the city as given by my immediate predecessor. They are substantially the same as given by him; but of course a valuation of general city property is hardly a criterion of its actual value if sold. But that it is worth to the city all that the schedule referred to represents, I think is reasonable to suppose.

The annual statement of the Auditor, which follows the form in which it has for some years appeared, as to the financial condition of the city, is apt to confuse any one not an accountant. In conversation with him, he agrees with me that it can and should be made simpler, and hence more easily understood. The Finance Committee has considered the matter, and it will not be wise or necessary for me to make any further remark, which properly belongs to my successor.

The Board has been occupied for considerable of its time at regular meetings in hearing "liquor cases," arising from alleged violations of the licenses. While it has been annoying, yet, as the contract is between the city and the licensees, this Board is by law the only one to decide if the contract should be cancelled for alleged violation. With this, no court has to deal. The "screen law" has been faithfully enforced, and the results have been, in my judgment, very favorable to the cause of temperance: preventing Sunday selling, except where no officer can detect; largely stopping the sale to minors and to partially intoxicated persons. The enforcement of this law may be obnoxious to those who would not violate their licenses, but I considered it unwise to make any distinction, and it has been applied to one equally with another, so far as I have any means of knowing.

The cordial indorsement which this Board has received from the best friends of temperance is a sufficient approval of its course.

The action of the City Council in erecting memorial tablets in different parts of the city will always be considered a very judicious movement, and reflects credit on this government.

The celebration of the two hundred and fiftieth anniversary of the settlement of Cambridge is a matter too recent to need

reference at this time, especially as the record of the day will, I trust, immediately be put in a permanent form. Providence certainly smiled on our efforts, and the opening of our sixth semi-centennial is with most happy memories and with favorable prospects.

Gentlemen, the hour when our official relations must cease has come.

Our official deeds for the year are beyond recall. For good or ill they must stand.

Without comparing your acts with those of any of your predecessors, I am confident that they will stand the criticism of time, and result to your credit. The committee meetings have been faithfully attended; the appropriations carefully scanned, and as carefully disbursed; and each department has seemed to vie with others in administering the city's affairs with proper economy and constant watchfulness.

As we separate, I shall carry with me the most pleasant memories, not disturbed by one unkind word or deed of yours. I can hope or wish for no greater blessing for my successor than that he may have the same cordial support and feeling that have been so cheerfully accorded me. And wherever in future life our paths may carry us, memory will ever cherish among her brightest days those of 1880.

JAMES M. W. HALL.

ORDINANCES PASSED IN 1880.

An Ordinance in Relation to the Salary of the City Physician.

SECTION 1. From and after the first Monday of January, 1880, the salary of the City Physician shall be at the rate of $1,000 per annum.

SECT 2. So much of Sect. 1 of Chap. 27 of the Revised Ordinances as is inconsistent herewith is hereby repealed.

[*Adopted March* 3, 1880.]

An Ordinance in Amendment of the Thirty-sixth Chapter of the Revised Ordinances.

Sect. 27 of Chap. 36 of the Revised Ordinances is hereby amended, by prefixing to the words in said section the following words: "No person shall swim or bathe, or permit any animal under his care to swim or bathe in Fresh Pond."

[*Adopted June* 2, 1880.]

An Ordinance establishing the Salary of the Inspector of Vinegar.

SECTION 1. The salary of the Inspector of Vinegar shall be at the rate of $175 per annum.

SECT. 2. This ordinance shall take effect upon its passage.

[*Adopted Nov.* 3, 1880.]

An Ordinance in Amendment of an Ordinance in relation to Accounts and Finance.

Chap. 6 of the Revised Ordinances is hereby amended, by adding at the end of Sect. 24 the words: "The Committee on Finance shall employ such clerks, permanent and temporary,

as may be necessary in the different departments. The duties and compensation of such clerks shall be determined by said committee, subject, however, to change at any time by order of the City Council. No head of a department shall employ any extra clerical assistance in behalf of the city without having first obtained the consent of the Committee on Finance."

[*Adopted Nov.* 3, 1880.]

An Ordinance in Amendment of an Ordinance in relation to the Cambridge Public Library.

Chap. 7 of the Revised Ordinances is hereby amended by striking out the second section thereof and inserting in its place the following: —

"SECT. 2. The care, superintendence, and management of said library shall be vested in a Board of Trustees, to consist of one member of the Board of Aldermen, one member of the Common Council, and five citizens at large, one of whom shall hold office for one year, one for two years, one for three years, one for four years, and one for five years, their several terms of office to be determined by lot, the same to be chosen in the month of January next, and annually thereafter in the month of January one citizen at large whose term of office shall be for five years from the third Monday in said January, unless sooner removed."

Also, in the third section, by striking out the word "three" in the fifth line thereof and substituting therefor the word "five," relating to the term of office of the trustees.

Also, by striking out the fourth section, and inserting in place thereof the following: —

"SECT. 4. Said trustees may choose from their number a chairman and secretary; they shall choose, annually, in the month of January, a suitable person to be librarian, who shall be removable at the pleasure of the board, and shall receive such compensation as the trustees may from time to time determine."

The foregoing amendments shall take effect on the first Mon-

day in the month of January, 1881, except that the trustees heretofore elected shall hold office until their successors are chosen and qualified.

[*Adopted Nov.* 17, 1880.]

An Ordinance in Amendment of an Ordinance in relation to Sinking Funds.

Chap. 34 of the Revised Ordinances is hereby amended by striking out the last five lines of Sect. 4, and inserting in place thereof the following words: —

"And whenever any payment is so made before the thirtieth day of November, interest shall be paid thereon by the Commissioners of the Sinking Funds, from the time of said payment until said thirtieth day of November, at such rates as the Committee on Finance shall from time to time determine."

[*Adopted Nov.* 17, 1880.]

An Ordinance in Amendment of an Ordinance in relation to Accounts and Finance.

Chap. 1 of the Revised Ordinances is hereby amended by inserting in the eighth line of the seventh section thereof, after the word "repair," the words "and shade trees and public grounds"; also, in the fourteenth line of the same section, by striking out the words "shade trees and public grounds."

[*Adopted Nov.* 17, 1880.]

MAYORS

OF

THE CITY OF CAMBRIDGE

FROM 1846 TO 1881.

James D. Green . . .	from May,	1846,	to April,	1848.
Sidney Willard . . .	" April,	1848,	to April,	1851.
George Stevens . . .	" April,	1851,	to April,	1853.
James D. Green . . .	" April,	1853,	to April,	1854.
*Abraham Edwards . .	" April,	1854,	to January,	1855.
Zebina L. Raymond . .	" January,	1855,	to January,	1856.
John Sargent	" January,	1856,	to January,	1860.
†James D. Green . . .	" January,	1860,	to July 24,	1861.
‡Charles Theo. Russell.	" July 31,	1861,	to January,	1863.
George C. Richardson .	" January,	1863,	to January,	1864.
Zebina L. Raymond . .	" January,	1864,	to January,	1865.
J. Warren Merrill . .	" January,	1865,	to January,	1867.
Ezra Parmenter . . .	" January,	1867,	to January,	1868.
Charles H. Saunders .	" January,	1868,	to January,	1870.
Hamlin R. Harding . .	" January,	1870,	to January,	1872.
Henry O. Houghton .	" January,	1872,	to January,	1873.
Isaac Bradford . . .	" January,	1873,	to January,	1877.
Frank A. Allen . . .	" January,	1877,	to January,	1878.
Samuel L. Montague .	" January,	1878,	to January,	1880.
James M. W. Hall . .	" January,	1880,	to January,	1881.
James A. Fox	" January,	1881.	Now in office.	

* Municipal year changed.

† Resigned.

‡ First elected by the City Council.

GOVERNMENT

OF

THE CITY OF CAMBRIDGE.

1881.

MAYOR.

HON. JAMES A. FOX.

ALDERMEN.

NEWELL CHAMBERLAIN,
FRANCIS L. CHAPMAN,
MICHAEL CORCORAN,
WILLIAM E. DOYLE,
HENRY H. GILMORE,
NATHAN G. GOOCH,
GEORGE W. GOODNOW,
EDWARD T. NICHOLS,
SOLOMON S. SLEEPER,
DANIEL R. SORTWELL.

Aldermen, by Wards.

Ward 1. Aldermen CHAPMAN and GOOCH.
" 2. " GILMORE and GOODNOW.
" 3. " DOYLE and SORTWELL.
" 4. " CHAMBERLAIN and NICHOLS.
" 5. " CORCORAN and SLEEPER.

Clerk.

JUSTIN A. JACOBS.

COMMON COUNCIL.

CHARLES WALKER, *President.*

GEORGE A. ALLISON,
STEPHEN ANDERSON,
CORNELIUS G. H. BENNINK,
GEORGE C. BENT,
JOHN CLARY,
GEORGE A. DAVIS,
JAMES E. DOYLE,
WILLIAM B. DURANT,
LUCAS B. GROVER,
WILLIAM A. HAYES, JR.
CHARLES W. HENDERSON,
JAMES M. HILTON,
FREDERICK H. HOLTON,
GEORGE H. HOWARD,
WILLIAM L. LATHROP,
PETER NELIGAN,
ALBERT NORRIS,
JOHN READ,
JOHN E. STEPHENSON,
CHARLES WALKER.

Common Council, by Wards.

Ward 1. Messrs. DURANT, HAYES, HILTON, and READ.
" 2. " BENNINK, BENT, DAVIS, GROVER, HOLTON, and STEPHENSON.
" 3. " ANDERSON, CLARY, DOYLE, and HOWARD.
" 4. " HENDERSON, LATHROP, NORRIS, and WALKER.
" 5. " ALLISON and NELIGAN.

Clerk.

J. WARREN COTTON.

Page.

WILLIAM PEARSON.

CITY CLERK.

JUSTIN A. JACOBS.

ASSISTANT CITY CLERK.

WALTER W. PIKE.

CITY MESSENGER.

FRANCIS L. PRATT.

COMMITTEES OF THE CITY COUNCIL.

Joint Standing Committees.

On Finance.

	Common Council.
The Mayor.	The President.
	John Read.
	George C. Bent.
Aldermen.	William A. Hayes, Jr.
Nathan G. Gooch.	George H. Howard.
George W. Goodnow.	George A. Allison.

On Public Instruction.

Aldermen.	Common Council.
George W. Goodnow.	The President.
Solomon S. Sleeper.	George A. Allison.
	Charles W. Henderson.
	John E. Stephenson.

On Ordinances.

Aldermen.	Common Council.
Solomon S. Sleeper.	William A. Hayes, Jr.
Henry H. Gilmore.	William L. Lathrop.
	John E. Stephenson.

On Accounts.

Aldermen.	Common Council.
Henry H. Gilmore.	Frederick H. Holton.
Newell Chamberlain.	William B. Durant.
	William L. Lathrop.

On Public Property.

Aldermen.	Common Council.
Edward T. Nichols.	James M. Hilton.
Michael Corcoran.	Albert Norris.
	John Clary.

On the Almshouse.

Aldermen.	Common Council.
William E. Doyle.	George A. Davis.
Solomon S. Sleeper.	John Read.
	James E. Doyle.

On Roads and Bridges.

Aldermen.	Common Council.
Francis L. Chapman.	John Clary.
George W. Goodnow.	Lucas B. Grover.
	Peter Neligan.

On Fuel.

Aldermen.	Common Council.
Nathan G. Gooch.	George A. Davis.
George W. Goodnow.	John Read.
	James E. Doyle.

On Lamps.

Aldermen.	Common Council.
George W. Goodnow.	Stephen Anderson.
Newell Chamberlain.	James E. Doyle.
	Albert Norris.

On Printing.

Aldermen.	Common Council.
Michael Corcoran.	William L. Lathrop.
Newell Chamberlain.	Frederick H. Holton.
	James M. Hilton.

On the Fire Department.

Aldermen.	Common Council.
Francis L Chapman.	Cornelius G. H. Bennink.
William E. Doyle.	George A. Davis.
	Charles W. Henderson.

On City Engineering.

Aldermen.	Common Council.
Edward T. Nichols.	George C. Bent.
George W. Goodnow.	William A. Hayes, Jr.
	George A. Allison.

On Assessors' Department.

Alderman.	Common Council.
Daniel R. Sortwell.	John E. Stephenson.
	George C. Bent.

On Claims.

	Common Council.
The Mayor.	The President.
	William B. Durant.
	Cornelius G. H. Bennink.
Aldermen.	
Henry H. Gilmore.	John E. Stephenson.
Nathan G. Gooch.	George H. Howard.
Newell Chamberlain.	George A. Allison.

Special Committee of Board of Aldermen.

On Soldiers' Aid.

Michael Corcoran. Henry H. Gilmore.
Edward T. Nichols. Francis L. Chapman.
William E. Doyle.

Standing Committees of the Board of Mayor and Aldermen.

On Police.

The Mayor. Michael Corcoran.
Henry Gilmore. William E. Doyle.

On the Fire Department.

Francis L. Chapman. William E. Doyle.
Edward T. Nichols.

On Roads and Bridges.

Francis L. Chapman. George W. Goodnow.
Edward T. Nichols.

On Sewers and Drains.

Michael Corcoran. Edward T. Nichols.
Solomon S. Sleeper.

On Licenses.

Edward T. Nichols. William E. Doyle.
Solomon S. Sleeper.

On Health.

Daniel R. Sortwell. Michael Corcoran.
Nathan G. Gooch.

On Bonds.

Daniel R. Sortwell, Nathan G. Gooch.
Newell Chamberlain.

On Claims.

The Mayor. Nathan G. Gooch.
Henry H. Gilmore. Newell Chamberlain.

Standing Committees of the Common Council.

On Elections and Returns.

Charles W. Henderson. Frederick H. Holton.
Peter Neligan.

On Bills in the Second Reading.

William B. Durant. George A. Davis.
Stephen Anderson.

On Enrolled Ordinances.

George H. Howard. Lucas B. Grover.
James M. Hilton.

Clerk of Committees.

John McDuffie.

Board of Health.

Henry P. Walcott, *City Physician.*
Daniel H. Thurston. George F. Piper.

Health Officer.

Alfred F. Holt, M. D.

Assistant City Physician.

Obed C. Turner, M. D.

Health Officers.

Frederick W. Hagar. George H. Copeland.
Timothy Ames. Thomas D. Cook.
Warner Simonds. Charles B. Jones.

Surveyors of Highways.

The same persons who compose the Board of Mayor and Aldermen.

Auditor of Accounts.

Franklin Perrin.

Treasurer.

William W. Dallinger.

Assessors.

Edmund B. Whitman. Artemas Z. Brown.
Andrew J. Green.

Assistant Assessors.

Thomas Stearns. Hugh V. Whoriskey.
John S. Pollard. Joseph Whittemore.
Oliver B. Campbell.

School Committee.

James A. Fox, Mayor, *ex officio*, *Chairman*.

Ward I.

Andrew P. Peabody. Horace E. Scudder.
Frank Goodwin.

Ward II.

James H. Hall. Phebe M. Kendall.
Benjamin F. Tweed.

Ward III.

Otis S. Brown. John O'Brien.
Edward B. Malley.

Ward IV.

Asa P. Morse. Sarah S. Jacobs.
William H. Orcutt.

Ward V.

Edmund H. Stevens. William Fox Richardson.
William A. Start.

Secretary.

W. W. Wellington.

Superintendent of Schools.

Francis Cogswell.

Overseers of the Poor.

The MAYOR, *ex officio Chairman.*

Sumner Albee. George D. Chamberlain.
Jonas C. Wellington. Ezra Parmenter.
Charles E. Vaughan.

Clerk.

David P. Muzzey.

Warden of the Almshouse.

William E. Hough.

Physician of the Almshouse.

Obed C. Turner (*Assistant City Physician*).

Cambridge Cemetery.

Commissioners.

The MAYOR, *ex officio.*

George T. Gale. Curtis Davis.
William Page. Silas B. Buck.
George S. Saunders. John F. O'Brien.

Superintendent.

James K. Farwell.

Trustees of Cambridge Public Library.

Alderman. Common Council.
Henry H. Gilmore. William B. Durant.

Citizens at Large.

Samuel L. Montague. George H. Folger.
John Conlan. John S. March.
Hersey B. Goodwin.

Librarian. Secretary.
Miss Almira L. Hayward. John S. March.

Cambridge Water Board.

The MAYOR and President of the Common Council, *ex officio*.

J. Warren Merrill. Henry L. Eustis.
Chester W. Kingsley. George P. Carter, *President*.
Knowlton S. Chaffee.

Clerk.

Justin A. Jacobs.

Superintendent of Water Works.

Hiram Nevons.

Water Registrar.

J. Warren Cotton.

Trustees of Sinking Fund of Water Loan.

The MAYOR, City Treasurer, and President of the Common Council.

Commissioners on Sinking Funds of the City.

John M. Tyler. Joseph A. Holmes.
Robert Douglass. Charles H. Saunders.
Frank A. Allen. Knowlton S. Chaffee.

Trustees of the Sanders Temperance Fund.

The MAYOR, and President of the Common Council, *ex officio*.

Alderman.

Nathan G. Gooch.

Common Council.

George A. Davis.
John Read.

Trustees of the Bridge Charitable Fund.

The MAYOR, and President of the Common Council, *ex officio*

Alderman.

Solomon S. Sleeper.

Trustees of the Dowse Institute.

The MAYOR, and President of the Common Council, *ex officio*.
William W. Wellington. Willard A Bullard.
Frank A. Allen.

Representatives in General Court.

Henry W. Muzzey. Sumner Albee.
Thomas W. Higginson. George D. Chamberlain.
Henry J. Wells. John McSorley.

Police Court.

Standing Justice.

John S. Ladd.

Special Justices.

William H. Orcutt. Jabez Fox.

Clerk.

Thomas McIntire.

City Solicitor.

John W. Hammond.

City Engineer.

William S. Barbour.

Commissioner on West Boston, Craigie's, and Prison Point Bridges.

Ezra Parmenter.

Superintendent of Streets.

Bainbridge W. Woodard.

Superintendent of Lamps.

Benjamin F. Nourse.

Board of Engineers.

Chief Engineer.

Thomas J. Casey.

Assistant Engineers.

First Assistant	Richard F. Tobin.
Second Assistant	Nathaniel W. Bunker.
Third Assistant	Charles W. Brackett.

Secre'ary of the Board.

Nathaniel W. Bunker.

Police Department.

Chief of Police.

Frederick W. Hagar.

Captains of Police.

District I.	District II.
Lothrop J. Cloyes.	George H. Copeland.

District III.

John F. Murray.

Captain of Night Police.

Mark J. Folsom.

Sergeants of Police.

Thomas D. Cook.	William Twist.
Andrew Sproul.	Michael A. Dalton.
Frederick B. Pullen.	William Mullett.

Policemen.

Andrew G. Smith.
George A. Marston.
Leonard Shackford.
David A. Stevens.
Edward F. Belcher.
Luther Hapgood.
Simon D. Hiscock.
Thomas H. Lucy.
George S. Dudley.
Benjamin F. Higgins.
Daniel Callahan.
Dennis Corcoran.
Moses W. Hooper.
Amos Jones.
Patrick Doyle.
Alonzo S. Harriman.
Thomas W. Penney.
William Evans, Jr.
Charles A. Brown.
William H. McMenimen.
Orrin B. White.
Michael J. Nolan.
William F. Batchelder.
Hugh McNamee.
Timothy Corcoran.
Charles B. Jones.
James E. Murray.
Thomas S. Hall.
William Nickelson.
Lawrence J. Ducey.
James S. Alexander.
Frank W. Scobey.
William Hawkins.
Warren A. Eaton.
Otis Dennison.
John W. Skelley.
Charles W. Priest.
Lewis A. Thurston.
Charles L. Pike.
Joseph H. Furbush.
William Gallagher.
Edward Brady.
Matthew R. Moore.
Jeremiah J. Delaney.
Michael J. Conry.
James M. Keaney.

Policemen (without pay).

J. L. P. Ackers.
Charles W. Ash.
Benjamin F. Bridden.
Thomas Briney.
William H. Bates.
Alexander A. Baker.
Nathaniel W. Bunker.
Ferdinand N. Buffum.
George T. Barrington.
Frank E. Balch.
Charles W. Brackett.
Soloman M. Busnach.
Richard Balmer.
Thomas J. Casey.
John Coffee.
Joseph Collins.
William Collins.
Moses M. Child.
Noah M. Cofran.
Patrick Corcoran.
Ambrose H. Clark.
John Collier.
Albert D. Cleveland.
William Clark.
Micah W. Cook.
James F. Dunn.

William H. Dodge.
Rufus S. Downe.
Moses Dudley.
Thomas H. Eames.
George D. Eaton, Jr.
Henry L. Emerson.
G. C. W. Fuller.
James K. Farwell.
John Fitzgerald.
William Foster.
William H. Grieves.
Charles A. Gay.
Michael Ginty.
William T. Gibson.
George W. Greenleaf.
Major Gaines.
Eli Goodrow.
Samuel F. Hunt.
Henry L. Hale.
Edward H. Howe.
Appleton Hubbard.
William Hunnewell.
William E. Hough.
Thomas M. Howard.
Frederick W. Hagar, Jr.
Martin J. Hannon.
Matthew P. Kelly.
Benjamin Kennard.
Roland Litchfield.
William O. Lowell.
Martin V. Langley.
James W. Lovering.
George B. Lothrop.
John Loughrey.
John Little.
Abiel E. Long.
Charles S. Lincoln.
Thomas McIntire.
Dennis Murphy.
John H. Menard.
Thomas Montgomery.
Francis M. Mason.
Benjamin McIlvaine.
Patrick F. Murray.
Philip McGovern.
David N. McCleary.
Michael J. Nolan.
Hiram Nevons.
William A. Norris.
Francis A. Osborn.
Thomas F. O'Brien.
Francis L. Pratt.
Eben Pratt.
William N. Porter.
Benjamin J. Pierce.
Lewis Pratt.
John Riley.
P. H. Raymond.
Charles L. Russell.
Bernard J. Roper.
John W. Richmond.
John J. Ryan.
Alonzo Stevens.
George Smyth.
Joshua S. Sanborn.
Josiah C. Smith.
Alex. F. Shepherd.
Thomas J. Sanders.
John H. Steward.
George J. Sutton.
George W. Tower.
Richard F. Tobin.
Abel F. Thurston.
Edward M. Williams.
Elijah Wilson.
James W. Wright.
Bainbridge W. Woodard.

Keeper of Lock-ups.

Frederick W. Hagar.

Truant Officers.

Moses M. Child. John Collier.
Francis M. Mason.

Constables.

Frederick W. Hagar.
William Twist.
John C. Burdakin.
Thomas McIntire.
Frederick A. Lull.
Thomas T. Ferguson.
Timothy Ames.
Michael S. Busnach.
Charles B. Jones.
Charles J. Adams.
John L. Boynton.
Lothrop J Cloyes.
Charles H. Hunnewell.
John F. Murray.
James I. Murphy.
John Lennon.
Thomas J. Stevens.
John R. Fairbairn.
Dennis D. McCarthy.
Mark J. Folsom.
John Good.
William Dallinger.
Warner W. Simonds.
George H. Copeland.
Alfred F. Holt.
William Evans, Jr.

Superintendent of Burial Ground in Ward I.

Benjamin F. Wyeth.

Undertakers.

Benjamin F. Wyeth.
Roland Litchfield.
Samuel F. Hunt.
Thomas Devens.
John W. Coveney.
Judson Litchfield.
James Kernan.
William Casey.
C. Henry Lockhart.
William A. Taylor.
Horace D. Litchfield.
James E. Rourke.

Auctioneers.

Samuel F. Rugg.
Edward Burnham.
Enoch H. Wakefield.
Frederick A. Lull.
Ira Taylor.
Daniel A. Buckley.
H A. Brown.
Edmund E. Sanborn.
John R. Fairbairn.
Jeremiah W. Coveney.
John Lennon.
William A. Munroe.
Thomas J. Stevens.
John K. Abbott.
True W. Townsend.
William Dickson.

Fence-Viewers.

George B. Lothrop.
Abel Stevens.
Francis H. Stickney.

Field Drivers.

Thomas D. Cook.
James B. Morse.
Micah W. Cook.
Andrew Sproul.
Andrew G. Smith.
George A. Marston.
Benjamin Kennard.
L. J. Cloyes.
William T. Gibson.
James Miller.
Leonard Shackford.
Daniel Callahan.
William H. Fitzpatrick.
John Le Barron.
Frederic B. Pullen.
Albert D. Cleveland.
Henry M. Tyler.
Alonzo S. Harriman.
Thomas W. Penney.
William Evans, Jr.
Luther Hapgood.
Simon D. Hiscock.
Rufus S. Downe.
Thomas H. Lucy.
Charles B. Jones.
James E. Murray.
John Little.
Thomas S. Hall.
Charles W. Rugg.
William Nickelson.
Lawrence Ducy.
Michael A. Dalton.
James Daily.
James S. Alexander.
William Mullett.
Dennis Corcoran.
Moses W. Hooper.
John F. Murray.
Matthew R. Moore.
Amos Jones.

Hugh McNamee.
Benjamin F. Bridden.
Daniel Sherman.
James H. Parks.
George Wood.
Warner W. Simonds.
John Coleman.
David N. McCleary.
Stephen E. Day.
John Collier.
Warren A. Eaton.
Otis Dennison.
John W. Skelley.
John Jackson.
Calvin C. Smith.

Measurers of Wood and Bark.

John R. Taylor.
William H. Hood.
Herbert T. Lawrence.
Thomas H. Matthews.
Nathaniel L. Allen.
Benjamin J. Hoyt.
J. Henry Wyman.
Frederick H. Lewis.
Frank A. Allen.
Joshua S. Sanborn.
Horace L. Porter.

Pound Keepers.

Elisha S. Woodard.
Thomas D. Cook.
William Twist.

Fish Officers.

Linn B. Porter.
Patrick H. Raymond.
D. Gilbert Dexter.

Hay Weighers.

Timothy Sullivan.
William H. Dodge.
Nathaniel L. Allen.
Joshua S. Sanborn.

Coal Weighers.

James F. Jefferds.
Thomas H. Matthews.
John E. A. Mulliken.
Patrick Kelley.
J. Henry Wyman.
George C. Gardiner.
Jones Valentine.
Alfred H. Wellington.
Joshua S. Sanborn.
Herbert T. Lawrence.
Leonard Bacon.
Horace L. Porter.

Weigher of Boilers and Heavy Machinery.

Joshua S. Sanborn.

Sealer of Weights and Measures.

Benjamin F. Nourse.

Deputy Sealer.

Conrad D. Kinnear.

Weighers.

Joseph W. Averill.
James H. Reardon.
Nathan H. Holbrook.
Henry Hooker.
Robert S. Paine.
Elisha S. Woodard.
George W. Wright.
Alvin M. Haines.
Henry James.
George W. Barnes.
John Reardon, Jr.
Joshua S. Sanborn.
Thomas Ralph.

Inspector of Milk.

John H. Farrell.

Inspector of Vinegar.

John H. Farrell.

Surveyors of Mechanics' Work.

William S. Barbour.
William A. Mason.
John S. Pollard.
Arthur Hodges.

Measurers and Surveyors.

E. F. Young.
Henry L. Hale.

Inspector of Charcoal Baskets.

Benjamin F. Nourse.

Measurer of Grain.

Benjamin F. Nourse.

Inspectors of Junk-Shops.

Frederick W. Hagar. Charles B. Jones.
Amos Jones. Mark T. Folsom.
Frederick B. Pullen.

Ward Officers.

Ward I.

WARDEN.
Edmund Miles.

CLERK.
John Gorman.

INSPECTORS.
John W. Sanger.
George T. Barrington.
James A. Martin.

Ward II.

WARDEN.
James E. Hall.

CLERK.
P. Allen Lindsey.

INSPECTORS.
Edward W. S. Jones.
Horace G. Kemp.
Dwight M. Turner.

Ward III.

WARDEN.
Daniel B. Shaughnessey.

CLERK.
Silas E. Buck.

INSPECTORS.
James W. Sweetser.
William J. Breen.
James J. Garvin.

Ward IV.

WARDEN.
Isaac S. Pear.

CLERK.
Frank H. Teele.

INSPECTORS.
John Locke.
George C. Howlett.
Peter J. Thorogood.

Ward V.

WARDEN.
Charles L. Fuller.

CLERK.
Fred. E. Whiting.

INSPECTORS.
Sylvanus G. Griffin.
Joseph Newman.
James Roper.

TABLE OF CONTENTS.

	Page
MAYOR'S ADDRESS	3
REPORT OF COMMITTEE ON FINANCE	26
Accounts of Treasurer	28
Polls and Valuations	28
REPORT OF AUDITOR OF ACCOUNTS	31
Receipts during the Year	31
Expenditures	31
Temporary Loan	32
City Debt	32
Funded Debt	33
Water Loan	35
Maturity of Debt	35
Liabilities and Assets	36
Ledger Balances	37
Receipts credited to Several Accounts	37
Expenditures charged to Several Accounts	38
Drafts and Payments compared	40
DETAILED STATEMENT OF RECEIPTS, EXPENDITURES, AND APPROPRIATIONS	41
Abatements and Discounts	41
Bills Receivable	41
Bridges	41
Bridges (West Boston, Craigie's, and Prison Point)	42
Cambridge Public Library	43
Cemeteries	44
City Lands	45
Cemetery Fund	45
Engineering	45
Fire Department	46
Health Department	47
Incidental Expenses	48
Interest	51
Interest on Water Loan	51
Lighting Streets	52
Loan, Temporary	52
Pauper Department	53
Pauper Department (Almshouse)	54

RECEIPTS, EXPENDITURES, AND APPROPRIATIONS — *Continued.* PAGE

Pauper Department (House Offal) 56
Pike, James 56
Police Department 56
Salaries 58
School Department (Drawing Schools) 59
School Department (Evening Schools) 59
School Department (Incidental Expenses) 59
School Department (Salaries) 60
School Department (Text-Books and Stationery) . . . 61
Schoolhouses (Care and Repair) 61
Sewers (Construction) 62
Sewers (Maintenance) 63
Shade Trees and Public Grounds 64
Sinking Funds 65
Sinking Fund of Water Works 65
State Aid 66
Stationery and Printing 66
Street Department (Paving) 66
Street Department (Repairs) 67
Street Department (Watering) 68
Surrendered Estates 69
Surrendered Estates (Care and Repair) 70
Surrendered Estates (Sale Account) 70
Tax, 1878 (Corporation) 71
Tax, 1878 (National Bank) 71
Tax, 1878 (County) 71
Tax, 1878 (State) 71
Taxes, 1878 71
Taxes, 1879 72
Taxes, 1880 72
Tax Lien Account 72
Water Works (Construction) 72
Water Works (Maintenance) 73
Water Works (Rates, Fines, etc.) 75
Water Works (Supplies) 76
REPORT OF THE CITY TREASURER 77
REPORT OF COMMISSIONERS OF SINKING FUNDS OF THE CITY 80
REPORT OF TRUSTEES OF SINKING FUND OF CAMBRIDGE WATER WORKS 86
REPORT OF COMMITTEE ON PUBLIC PROPERTY . . . 90
REPORT OF BOARD OF HEALTH 106
REPORT OF COMMISSIONERS OF THE CEMETERY . . . 116
REPORT OF OVERSEERS OF THE POOR 119
Expenditures and Receipts at Almshouse 124
Outside Aid Department 126
Almshouse Department 127
Farm and Ledge Department 129
House Offal Department 130
REPORT OF WARDEN 132
REPORT OF CITY PHYSICIAN 137

PAGE

REPORT OF CHIEF ENGINEER OF THE FIRE DEPARTMENT, 139
Board of Engineers 146
Engines and Companies 146
Fire-Alarm Telegraph 149
Fires and Alarms 150
REPORT OF SUPERINTENDENT OF STREETS 159
Streets 160
Bridges 161
REPORT OF CHIEF OF POLICE 163
REPORT OF SUPERINTENDENT OF LAMPS 171
REPORT OF SEALER OF WEIGHTS AND MEASURES . . 176
REPORT OF MILK INSPECTOR 177
REPORT OF VINEGAR INSPECTOR 186
REPORT OF CITY ENGINEER 190
Streets 191
Bridges 192
Sewers 193
Water Works 196
Cemetery 201
Work of the Office 201
REPORT OF BRIDGE COMMISSIONER 202
REPORT OF TRUSTEES OF THE CAMBRIDGE PUBLIC LIBRARY, 206
REPORT OF TRUSTEES OF DOWSE INSTITUTE 214
REPORT OF TRUSTEES OF BRIDGE CHARITABLE FUND . . 215
REPORT OF TRUSTEES OF SANDERS TEMPERANCE FUND . 216
REPORT OF SANDERS TEMPERANCE FUND MISSIONARY . . 218
REPORT OF THE COMMITTEE ON SOLDIERS' AID . . . 220
REPORT OF WATER BOARD 221
Purity of Water 228
Water Supply 230
REPORT OF THE WATER REGISTRAR 237
REPORT ON ACCOUNTS OF WATER BOARD 245
REPORT OF SUPERINTENDENT OF WATER WORKS . . . 247
REPORT OF THE ENGINEER OF THE WATER WORKS . . 259
REPORT OF SCHOOL COMMITTEE 263
Tabular View of Schools 274
REPORT OF SUPERINTENDENT OF SCHOOLS 278
Summary of Statistics 278
ADDRESS OF HON. JAMES M. W. HALL 291
ORDINANCES 296
Salary of the City Physician 296
Bathing in Fresh Pond 296
Salary of Inspector of Vinegar 296
Accounts and Finance 296
Public Library 297
Sinking Funds 297
Accounts and Finance 298
MAYORS SINCE 1846 299
MUNICIPAL REGISTER 301

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